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ANALYSIS OF CLOVER,

.....

Being the results of an investigation by MR. HORSFORD, now of the Giessen Laboratory, Germany.

THE following paper, received by a gentleman in this city from Mr. HORSFORD, was read, illustrated with diagrams, by Prof. HALL, at one of the weekly Agricultural Meetings, held at the Capitol, during the past winter. It is a valuable document, and will be found of interest, not only to chemists and men of science, but to readers in general;—the conclusions deducible from the analysis, agreeing precisely, as will be seen, with known practical results.

.....

In the progress of the last term, while other chemical labor was going forward, I made an ash analysis of red clover, and accompanied it with a little investigation which I will record below.

To the latter I attach, in its isolation, no especial value, inasmuch as the circumstances in which it was conducted deprive it of perfect scientific exactness. I make it the basis, as you will observe, of explaining one or two chemical processes.

It is well known that the juice of clover heads contains more or less sugar. The nectaries of the fully developed head are especially rich in a honey-like liquid which bees gather. In cutting the clover, when the heads are fully formed but not ripe, the sugar of this honey must be secured. The water will evaporate, leaving the sweetness with the vegetable fibre, and other organic matters, to be fed to stock. If the clover be cut before the heads begin to develop, the sugar, if formed, must be in the stems and leaves. If not cut till the seeds are ripened, the sugar may have accomplished one of its supposed ends—that of keeping up a higher temperature within the seed, for the elaboration of its various parts—and thereby have been destroyed.

It was my purpose to learn how much sugar—or rather, the relative amounts of sugar there might be at the above named three stages of the development of clover. Experiments with the first two kinds were made. The clover crop being no where permitted to ripen, I was unable to submit the inquiry concerning the third to the test of experiment.

I cut clover exactly at the surface of the soil, on the

16th day of June, just as the tufts of leaflets enclosing the heads were discernible. These I chopped to fineness, and placed a weighed portion in a flask, connected through the medium of a chloride of calcium tube, with a Liebig's potash apparatus, having previously thoroughly mixed with the clover a small quantity of fresh, carefully washed beer yeast, and covered the whole with water. Fermentation went briskly forward for several days.

On the first of July, when the heads were fully developed, I cut another portion, and having finely chopped, weighed, and mixed with the yeast and water, connected all with a potash apparatus, as above.

Without, or beyond both the potash tubes, were tubes of hydrate of lime, to prevent the absorption of carbonic acid from the air. This diagram displays the connections. [See diagram, top of next page.]

On the 30th of July, the fermentation being quite closed, the potash apparatus of the last mentioned, had increased in weight by 1.15 per cent. of the whole weight of clover subjected to fermentation. The first mentioned had increased only by 0.80 per cent. Thus the amount of carbonic acid evolved from the mass last cut, was almost half as much more than that from the quantity first cut.

It may be well, since I have introduced so many expressions betraying the laboratory, that I endeavor to explain the mode by which I hoped to learn the relative amounts of sugar in the two kinds of hay.

Most persons are familiar with the fact that distillers ferment large quantities of grain to obtain alcohol. The process to which the grain is subjected, effects a decomposition of the sugar of the grains into carbonic acid and alcohol.

The sugar susceptible of this decomposition is grape sugar—that to which the sweetness of apples is due, and which is manufactured in immense quantities on the continent, from the starch of potatoes. Its composition, determined from analyses, is

Carbon,.. 12 atoms,
Hydrogen, 12 "
Oxygen,.. 12 "

Or in the language of Chemistry, $C_{12} H_{22} O_{11}$

If we take from this four atoms of carbonic acid, ($=CO_2$),..... $C_4 O_8$

there remain,..... $C_8 H_{18} O_4 = 2$ atoms of alcohol; the composition of alcohol being,..... $C_4 H_6 O_2$

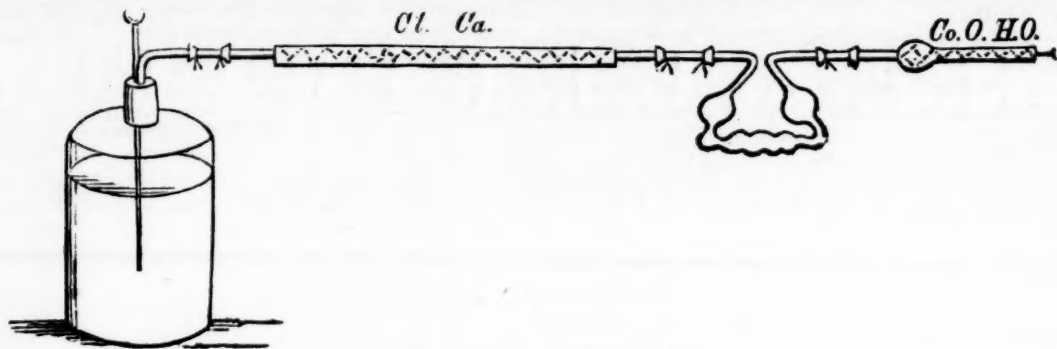
The alcohol becomes the "high wines." The carbonic acid floats over the fermenting tubs.

Thenard has shown, by distilling and collecting the alcohol, and weighing the carbonic acid arising from the decomposition of a given weight of sugar, that the weight of the latter, and the sum of the weights of the former equal each other.

The alcohol may be permitted to go directly into acetic acid, as takes place with fruit when exposed to air, or continued as such by excluding the air.

Vinegar has the following composition:— $C_4 H_8 O_3$. In order to its formation from alcohol, three atoms of hydrogen must be taken away and one atom of oxygen added.

This takes place quietly and slowly in the cider,



wine, and beer casks, as well as vinegar pipes, with which all are familiar.

The housewife, to keep the vinegar on the increase, adds wine, or whiskey, or cider, or maple sap, or molasses. All these contain sugar or alcohol. The sugar is resolved into alcohol and carbonic acid. The alcohol, however, does not continue as such, if the liquid be exposed to the action of the air, but goes into vinegar, or acetic acid.

These decompositions have now been so much and so clearly studied that the results are perfectly understood. The causes of the decomposition are still matters of discussion.

To return. The carbonic acid, to whose addition, the increase in weight of the potash apparatus is to be attributed, speaks a certain amount of sugar, from which it was derived. The larger per cent of carbonic acid corresponds to a larger per cent of sugar.

I will add the analyses of the ashes. From them you may see one of the parts that sulphate of lime plays in the development of clover.

You may remember that Franklin, anxious to convince our countrymen of the efficacy of gypsum as a manure, strewed a few handfuls of it in the form of large letters upon a clover field. In a few weeks the plants that had received the benefit of this manure, had so far outgrown, and had taken on a color so much deeper and richer than the others around, that the wonder of passers by was naturally excited.

It was the ashes of this plant that I analyzed.

Of the whole plant in its green state, the earthy ingredients or inorganic constituents, equal, merely, 1.83 per cent.
Of the leaves, 1.75 per cent.
Of the stems, 1.40 per cent.
The water in the green clover, determined by two experiments, gave, 83.55 and 83.58 per cent.
Of the dry plant altogether the per cent.
of ashes was, 11.18 per cent.
Of the leaves, 10.69 per cent.
Of the stems, 8.52 per cent.

| No. 1. | Ingredients of the ashes. | No. 2. |
|--|-------------------------------|----------|
| Ko*..... | = 12.164 = Potash,..... | = 16.101 |
| Na..... | = 1.414 = Sodium,..... | = 1.874 |
| NaO..... | = 30.757 = Soda,..... | = 40.712 |
| CaO..... | = 16.556 = Lime,..... | = 21.914 |
| MgO..... | = 6.262 = Magnesia,..... | = 8.289 |
| Po ₈ +2Fe ₂ O ₃ | = 0.506 = Phosphate Iron, .. | = .670 |
| Cl..... | = 2.159 = Chlorine,..... | = 2.856 |
| Po ₅ | = 2.957 = Phosphoric acid, .. | = 3.915 |
| So ₃ | = .801 = Sulphuric acid, .. | = 1.063 |
| Sil ₃ | = 1.968 = Silica,..... | = 2.605 |
| Co ₂ | = 22.930 | |
| Sand and coal | 1.244 | 100.000 |

99.718

The first table contains the direct per cent results of the analysis. Table No. 2, the per cent results, deducting the carbonic acid, coal, and sand.

In glancing at the results of the analysis, we see how large a part is made up of potash, soda, and lime. The sulphuric acid is there. Without its presence in the

soil it could never have gained a place among the tissues of the plant. If it be an essential *irreplaceable* ingredient, as phosphoric acid is in the seeds of wheat and corn, it is readily seen how Franklin's selection of clover may have been peculiarly happy. I do not pretend to say it is indispensable. A series of experiments and accurately conducted analyses only, could settle such a question.

The sand was probably spattered upon the stalks by rain, and a certain amount of coal remained, with the most careful and long continued burning.

The large proportion of carbonic acid is particularly worthy of attention. Comparing it with the sum of all the other acids—the phosphoric, sulphuric, silicic, hydrochloric, of which the chlorine is given, we see how far it exceeds them. Again, glancing at the per cent. of bases, we see how very large the proportion when compared with the sum of the inorganic acids. This surplus of base was most of it united to organic acids. These, in the burning of the plant, have been destroyed. Their place has been taken by carbonic acid, or for the most part. Here is nearly 23 per cent. of carbonic acid.

In an analysis of the ashes of sugar cane, made here last summer, there was not a trace of carbonic acid. Such is the difference. In the sugar cane, the percentage of silica was large. Timothy grass ashes gave also no carbonic acid, but a large per cent. of silica.

Setting together some of the results of this little investigation—

The moisture of green clover amounts to 83.5 per cent.

The clover contains a certain amount of sugar—a body capable of fermentation.

What hints come to the farmer from these two facts?

If the clover be taken to the mow with this weight of water, the fluid among the fibres of the stalks and leaves, will permit that intestine motion necessary to fermentation; and not only will the sugar be lost, but vinegar will be formed, souring the whole mass, and rendering it unpalatable for stock.

If it be properly dried, on the other hand, the sugar as such, will remain with the vegetable fibre, and go to nourish the stock, furnishing horses and cattle with an element whose combustion serves to keep them warm.*

But again—leaves contain 10.69 per cent. of ashes, while stems contain 8.52 per cent.

Now, as these inorganic matters are more or less serviceable in the animal economy, the leaves containing most of them should particularly be preserved, and as the ashes of the whole plant, including the head, have 11.18 per cent. of ashes, it is clear that the preservation of the heads and leaves are decidedly more important than that of the stems.

Hence the farmer cuts the clover, and instead of parching it in the sun, as in many places, cocks it for a few hours, that the vapour evolved from within in the process of drying, shall keep the stalks and leaves without, from becoming too suddenly dried and unnecessarily brittle.

In closing this communication, I will state one of the

* To those unacquainted with chemical symbols, it may be as well to remark, that the signs "Ko," "Na," &c., are explained by the terms "Potash," "Sodium," &c.—Ed.

* The discussion between Dumas and Liebig relative to the formation of fat from sugar, has been settled in favor of the latter, by a repetition, on the part of Dumas, of the experiments made several years since by Liebig.

results to which the experiments of Professor Liebig are daily leading.

In the spring preceding my arrival in Giessen, the Prof. planted some grape scions under the windows of the laboratory. He fed them, if I may use such an expression, upon the ashes of the grape vine,—or upon the proper inorganic food of the grape, as shown by analyses of its ashes. The growth has been enormous, and several of the vines bore large clusters of grapes in the course of the season. Indeed, I know not but all, as my attention was drawn to them particularly only since the fruit has been gathered. The soil otherwise is little better than a pavement—a kind of fine gravel, in which scarcely anything takes root.

I was shown pots of wheat, in different stages of their growth, that had been fed variously,—some upon the inorganic matters they needed, according to the analyses of their ashes—others had merely shared the tribute of the general soil. The results in numbers I don't yet know. In appearance, no one could be at a loss to judge of what might be expected.

I may mention in this connection, that I gave Prof. Liebig five varieties of American corn, all of which were planted, but not one of which came to maturity, though the first frost in Giessen was about the 20th of October. The climate is essentially different from ours. I think the heat of summer with us must be more intense.

The experiments of Prof. L., which I have alluded to above, are full of interest, not alone as sustaining the views he has expounded, but as also showing that the treasures in the shape of inorganic manures, heaped up in some quarters of the globe may be made to equalize the fruits of labor in other regions.

The salt plains of our western territories, may have yet a part to play in enriching soils wide removed from them; and lands condemned to support a few dwarfish evergreens, may hereafter be found blooming with varied and rich vegetation, the reward of rational agriculture.

PLOWING.

.....

MR. EDITOR—Franklin uttered as much truth as poetry, when he said—

Plow deep while sluggards sleep,
And you shall have corn to sell and to keep.

Some may not acknowledge the full force of the words, "while sluggards sleep"—that is, they may not think there is much benefit to be derived from plowing in the dew; be that as it may, such notions are incentives to early rising and industry, if nothing more. But if that does not suit, have it in this way:—

Plow deep, and manure well,
And you shall have corn to keep and to sell.

Deep plowing, with a corresponding quantity of manure, is now universally recommended by our best farmers.

But there is another subject—the manner of laying a furrow on which there is a difference of opinion—some contending that it is best to lay the furrow perfectly flat, and others, that it should be laid as nearly as possible at an angle of 45 degrees; now both methods are best in different circumstances.

If the soil is light, sandy, and not inclined to wetness, the flat method is altogether the best, but in a soil of a contrary description, as many of our lands are, the 45 degree furrow is to be preferred.

Much more labor than is necessary is frequently expended in preparing the ground for a crop. I would not be understood as saying that one plowing is sufficient under all circumstances, but in a tenacious soil, it is often good economy to let the ground rest a considerable time between the plowings. Instead of plowing a piece of tough green-sward three or four times in the spring, when the team is comparatively weak, to prepare it for a crop, let it be neatly plowed in September, then lie until spring, and a couple of agents will come, while you and your team are asleep, and pulverize it for you, and do it better than you can and do it

for nothing too. Do you inquire the names of those two clever fellows? The name of one is *fermentation*, and the name of the other *frost*. HIGHLANDER.

New-Lisbon, Jan. 24, 1846.

THORN HEDGES.

.....

L. TUCKER, Esq.—There have, of late, occasionally appeared in your paper, articles in reference to hedges. As this indicates a rising interest on the subject, my giving you the result of my experience on it, may not be unacceptable to you.

Hedge enclosures are highly ornamental to a country. They are beautiful as mere visual objects, and the impression of their beauty is enhanced by the ideas they suggest, of shelter, and comfort, and unison, with the natural clothing of the land. When properly trained, they are besides, durable and efficient fences. In a new country, ornament, it is true, must be a secondary consideration, and where timber is abundant, no kind of enclosure can, in point of utility, excel the common rail fence. It is easily and speedily put up, easily kept up, and easily removed; while a hedge requires years of care and labor. There are, however, regions of the states in which timber is scarce, and in all situations, ornament to some extent may be desired. It is, in consequence, important to know what plants are most suitable, in this part of the world, for the purpose of forming a hedge, and the best mode of rearing them into such a fence.

In turning my attention to the subject, my object was to enclose my garden, orchard, and house-yards, with something more pleasing to the eye than rails or boards. The British Hawthorn, so extensively used for fencing in its native country, might have answered my purpose; it could have been procured in the eastern nurseries, or by importation,* or might have been raised from the seed, which vegetates freely; but being aware that even where indigenous, it is susceptible of injury from drouth, and seeing that the specimens of it I had met with in this country, never appeared to assume their native verdure, and were often scathed and blighted, I fixed on one of the American thorns, the *Crataegus Crus-galli*, (Eaton,) or Cock-spur thorn, which, from the beauty of its shining leaves, and the style of its growth, seemed well calculated to serve the purpose in view.

My first attempt to raise it from seed was quite unsuccessful. Out of perhaps a peck sown, one plant only came up at the end of two years. I then gathered the seed in the fall, placed it covered with litter and earth, in a hole dug in the ground, where it remained until the fall succeeding, when it was sown in a bed in the garden. It did not vegetate in the ensuing spring, but in the next it did, in considerable quantity, and still more so in the following; that is, two and a half and three and a half years after being taken from the tree. It is probable that this very objectionable difficulty, in getting the seed to spring is not insuperable; for on one occasion, I put a small quantity of it with earth into a flower-pot, which was kept watered all winter in a warm room, and though taken from the tree, the preceding fall, some of it had vegetated before the commencement of spring. This fact points to a remedy of the difficulty, but I did not make any further experiments in raising plants from seed, having found a more easy way of supplying all I required. Under two aged trees of the species in question, I discovered that in the end of April or beginning of May, an abundance of plants, destined to be afterwards browsed by cattle, or smothered by the grass, rose from the seed that had previously fallen. These I transplanted while many of them were only in the seed leaf, and with complete success. By this very simple process, I procured in one season, above a thousand plants.

At one year old the plants ought to be transplanted, and their tap roots pruned, that they may be kept clear

* Some sent here in 1841, though they did not arrive till the month of June, and had sprouted on the voyage, yet grew.

of weeds, and that their roots may be better prepared for ultimate removal to the hedge. They will be in the best state for use at three years old, though if growing freely, they may answer well enough at two. When planted in the hedge, they should be cut over, within three or four inches of the ground, which will induce a fresher and thicker growth than if the whole top were allowed to remain. If a luxuriant growth is desired, it need hardly be said that the ground before planting, should be deeply dug and enriched, and in every case, it will conduce to economy in the ultimate object of having a fence, that the ground should be made as free as possible of the creeping rooted grasses. While the plants are unable to protect themselves, all weeds must be extirpated.

Around my garden the hedge stands on the level surface. Elsewhere I have deviated slightly from this mode. The most common way of making a hedge in some parts of the old world, is by cutting a ditch with sloping sides, four feet wide at the surface, and eighteen inches deep, and forming the materials taken from the ditch, into a bank on one side of it, about half way up the sloping face of which, the thorns are planted. A cross section of the work when finished would appear thus.

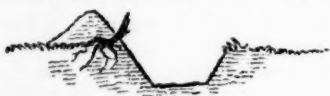


Fig. 40.

This manner of construction has several advantages, but in our climate the atmosphere is too dry in summer, and the frost too severe in winter to admit probably, of its adoption. In its stead, I have cut a ditch with sloping sides, of only eighteen inches deep. On one side, the turf is set up with its green surface towards the ditch, and beaten with the spade into a slope corresponding with the side of the ditch. The earth from the ditch is thrown in at the back of the turf previously to its being beaten, and made to slope gradually from it. The top of the turf is brought to a regular line, and the thorns are planted eight inches above the level of the bottom of the ditch, and thus the fence is made a little more formidable, while the ditch may serve for leading off the surface water from the cultivated space enclosed.

A fence strong enough to resist cattle requires that each individual of the hedge have a stem of considerable thickness, and therefore the plants should not be placed nearer than a foot asunder. If planted nearer they stretch up weakly, and are apt to injure each other, the weak deteriorating the growth of the strong, and the strong killing the weak. Much pruning tends also to dwarf the stems, and should be avoided, because when the stems have attained sufficient size, the hedge can be reduced in height and width to what is desired. The most expeditious instrument for the purpose of pruning is a slightly curved knife, with a keen edge, about ten inches long and two broad, fixed by a hose, on a handle three feet long. In this operation, the only points necessary to attend to, are, that the upper branches shall not hang further out than the lower, and that the more vigorous plants shall not overtop those that grow beside them. In this way, when a hedge is pruned at the end of a season, its form will consist of a straight line on the top, and sides sloping inwards from the bottom to a point at the top. If the sides be left perpendicular even, the upper branches will injure those below them, and the hedge become thin at bottom. The conical form is besides more graceful in appearance—it is, in all trees, the style of nature.

I do not pretend that my modes of procedure are the best, but I have great confidence in stating that in the *C. crus galli*, we possess a native tree admirably suited for making a fence. I have tried several of the other species of native thorns, none of which seem, in suitability, deserving of comparison with it. The *C. coccinea* stands nearest to it in the requisite quality of thickness of the growth of its branches, and has a handsome foliage. The *C. punctata* would make a beautiful hedge, grows very thick under cutting, and is very early in leaf, but it is deficient in strength and in spines. The formidable spines of the *C. latifolia* induced me to use it, in making one part of the fence con-

nected with my garden. Its tendency, however, to upward and tree like growth, in defiance of the knife, is so great, that I have determined to substitute the *C. crus galli* in its place. The latter has every requisite for a fence, and appears, in some respects, to surpass the Hawthorn even, in its most favorable localities. Its spines are longer, sharper, and more numerous than those of the Hawthorn; it has fully as great a tendency to a branchy style of growth; being a native, it is adapted to the climate; and in addition to all these recommendations, its splendid foliage renders it in the highest degree ornamental. I have reason to think too, that it is less liable than any other thorn to be bruised by cattle, a matter, if true, of great importance while a hedge is young. The branches of the two fine specimens mentioned above, hang down in a thick mass to the ground, though in a situation to which cattle have at all times had free access. The only objection to its use is the resistance of its seeds to vegetation. It would be needless to speculate on what artificial means might be tried to bring it to germinate in a shorter time and with more certainty. I shall only add that the ground in which, in my experiment, the seed was sown, proved too tenacious. Though the weeds were kept down with the Dutch hoe, it became unfavorably compact. Were I to make another attempt of a similar kind, I should sow in drills in a bed of vegetable mould of the loosest description, and then, in time, a full crop might be depended on, which, as it rose, could be transplanted in the autumn without disinterring what seed had still to spring.

JOHN RANKIN.

Canandaigua, March 14, 1846.

KITCHEN CHEMISTRY.—No. II.

.....

HEAT.

Principles.—The heat of bodies may be affected in various ways, among which are, by conduction, by radiation, and by the conversion of solids into liquids and liquids into vapors. 1. The *conduction* of heat through bodies is familiar to most persons. If a short rod of iron be held in the fire, the heat passes along it, until the whole is gradually more or less heated. But if a rod of wood or earthen ware is similarly placed, it becomes warmed through its length in a very small degree. Hence, iron is a good conductor, and wood and earth, bad. Iron feels colder on a cold day, than wood, by conducting the heat more rapidly from the hand, though the actual temperature of the two substances may be the same. Hence the reason that red hot iron burns more evenly than burning charcoal.

2. Air is a very bad conductor, yet on standing before a fire, heat is felt at a considerable distance, being thrown out in straight lines from the fire by *radiation*—in the same way that rays of light are radiated in straight lines from a candle.

3. If a small vessel be filled with snow on a very cold morning, say at 10 degrees Fah., the immersion of the thermometer in the snow will show that temperature. Apply the heat of a lamp to the vessel, and the thermometer will rise as the snow becomes warmer, till it gets up to 32 degrees, (the freezing point,) when it will remain perfectly stationary till all the snow is melted. It is found that the time thus required to melt the snow, would have heated an equal weight of water up to 172 degrees, or 140 degrees above freezing. That amount of heat has therefore disappeared or become *latent* to melt the snow. Continue the heat of the lamp, and the thermometer will rise till it reaches 212 degrees, when the water will boil; it then remains stationary till all the water has boiled away. It has been found that the time required to evaporate all the water would have heated it to 1212 degrees, or that 1000 degrees of heat has disappeared or become latent to convert the water into steam. The heat required for liquefaction, is also shown by mixing an equal weight of snow at 32 degrees, and water at 172 degrees; the snow all melts, but the resulting liquid is only 32 degrees, the 140 degrees of the hot water having gone to melt the snow. A vessel of water in freezing, is con-

stantly giving out heat, but the temperature does not lower till it is all frozen, as it is the latent heat only that is passing off.

Application.—The applications of these principles are very numerous and important, some of which, here mentioned, may not strictly appertain to the kitchen.

1. Metals being good conductors, they are best for vessels over the fire, the heat passing readily through, to the substances contained in them. Hence, too, why copper, which is one of the best conductors, is employed as the heating-rod or tube, for lard lamps. Wood, being a poor conductor, is advantageously used as a handle for vessels and tools which become heated, by not burning the hand. Hence also, the reason that earthen-ware tubes are best for the insertion of stove pipes, through wooden partitions, when metals by conducting the heat rapidly to the wood, might set it on fire.

2. Different substances and surfaces *radiate* heat very differently. Light and porous bodies usually throw it off from themselves, much more rapidly than heavy and compact ones; and smooth and polished surfaces more rapidly than rough surfaces. Hence the heat thrown off from a large fire of burning wood and charcoal,—porous substances—burns the face more than the heat from a metallic stove, not a porous substance. Polished metals radiate very slowly; hence water will remain hot much longer in a tea-pot, kept bright and polished by the neat housewife, than in the tarnished tea-pot of the careless one. For the same reason, pipes for carrying heat by hot water or hot air furnaces, should be bright, in order that none may be wasted on the way, till it reaches the place of destination. Hence also the reason why stove pipes and drums made of polished Russia iron, do not throw off so much heat as iron whose surface is rough, or rendered porous by blacking.

Substances radiating freely, absorb also freely; and those radiating little, absorb little. Hence the reason that a polished tin plate, placed under a hot stove, or beside it against a wooden wall, remains cold, and protects the wood. Hence also, as every cook knows, a bright baking tin will not absorb heat and burn the bread as a blackened one will; and indeed it often prevents the proper degree of baking, which is at once obviated by giving it a slight coating in the smoke of a lamp. A new tin boiler, over a clear and hot charcoal fire, failed to boil water at all; the reason being suspected, a few shavings of pine were thrown in to smoke the surface,—when the water soon boiled rapidly. Hence the utility of the thin coating of soot which forms on the bottom of boilers.

3. Boiling water, (in all ordinary cases,) being always at 212 degrees Far., it is obvious that a pot of potatoes will cook just as fast when boiling slowly as when boiling very fast; hence the notion of cooking a boiled dinner faster by a very hot fire, is founded in error, and only wastes fuel. The great amount of latent heat carried off by steam, renders it important to keep boiling vessels closed by metal covers, which condense steam, and return in part the latent heat. Covering newly baked bread, by a cloth, condenses the rising steam in the same way, and keeps the crust soft. It is the amount of heat required for evaporating water, though by the slow process at common temperatures, that occasions the cooling process of sprinkling rooms in hot weather. The more rapid evaporation of ether and alcohol, render cooling by these substances more effectual and rapid. Baked potatoes remain long hot; but if the skin be broken, to let out the steam, they soon cool by the passing off of the latent heat of the steam.

Were it not for the latent heat required to convert snow into water, warm weather would dissolve at once our snow-banks into liquid, and tremendous inundations would be the consequence. From a similar cause, the water in the dinner pot is not boiled off at a flash, and the dinner spoiled.

Water freezes sooner than many other substances; hence often the water freezes and leaves them when they are mixed or in solution. Hence the ice mountains of the polar seas are fresh; and hence the concen-

tration of vinegar, lemon juice, and maple sap by freezing.

THE YELLOWS.

.....

MR. TUCKER—The yellows in peach trees, is a subject that still continues to be interesting in this part of the country. I wish, therefore, to communicate a fact which may be of some importance in our inquiries after the cause of that disease.

Four years ago, Mr. B. Silliman, Jun., of this city, procured from Liverpool a considerable number of young peach and nectarine trees, *budded on plum stocks*. Some of them were put for standards and others walled upon a board fence. There had been no peach trees for twenty years on the ground where those were planted. They grew well the first season, and appeared in perfect health. The second season some of the *peach* trees showed symptoms of yellows, and died the third season. At the present time, (February, '46,) no one of the trees, either nectarine or peach is free from disease. In the garden adjoining that of Mr. Silliman there were diseased trees standing at the time the imported trees were planted out.

The following inferences may perhaps be safely made from this experiment.

1. Budding on plum stocks, is not a security against the "yellows."

2. The plum tree has not hitherto been known to be liable to the disease. We may therefore conclude that the disease commenced in Mr. Silliman's trees in the *peach* and not in the *plum* portion—that is, in the *top*, and not in the *root*. This furnishes a strong probability that it is the natural course of the disease to commence and be seated primarily, in the part of the tree above ground.

3. The disease did not arise from anything inherent in the trees, but from some cause external to and disconnected from them. The ground of this conclusion will not be apparent without taking in connection with what has been stated, the fact, that the "yellows" is unknown in England. This conclusion bears pretty directly upon an important theory, which has been very ably presented to the public in a recent work, and met with a favorable reception. The theory is thus stated:—The yellows is "a constitutional taint, existing in many American varieties of the peach, and produced in the first place by bad cultivation, and the consequent exhaustion arising from successive over-crops. Afterwards it has been established and perpetuated by sowing the seeds of the enfeebled tree."

It is most sincerely to be regretted that any fact should present itself, that seems irreconcilable with a theory, which offers to us, if correct, so ready and sure a means of having healthy trees. According to the theory, trees procured from regions where the disease has not appeared—England, France, Italy, China, or even our own "Great West," for example—*should* be free from disease, and *should* continue so, if planted in an unexhausted soil. Mr. Silliman's experiment leads us to apprehend that we are not in that way to escape the evil.

To see that we make no unwarranted conclusion, let us advert to the facts and circumstances involved in this trial of foreign trees. It is well known that the "yellows" has not appeared in England. Mr. Downing, ("Fruits and Fruit Trees of America," p. 467,) states a further fact, that "notwithstanding the great number of American varieties of peach trees that have been repeatedly sent to England, and are now growing there, the disease has never extended itself there, or been communicated to other trees." Peach trees in England, therefore, have *no constitutional taint*, that makes them liable to the "yellows;" and if they remain there they never take the disease. But bring these trees to New Haven, and in fifteen months after their arrival they are dying with the "yellows." There must therefore be *something* here which is not there. The disease shows itself too soon after the trees reach this country to admit of the supposition, that the exhausting processes,

said to be peculiar to our climate and practices, have an agency in producing it. Must we not suppose the disease to be connected somehow with *place* rather than *condition*? It matters not where our trees or seeds come from—Liverpool, Flushing, Newburg, western New-York or Ohio—if planted out in New-Haven or its vicinity, either in light sand, or deep, rich loam, they die of the “yellows;” some in one, some in two, all in three or four years.

The inference from all this seems unavoidable, that the cause of the disease has existence independent of the constitution of the trees. What this cause is, where it is, what it is attached to, what it emanates from, thousands besides myself are waiting and watching with anxiety to know. Many facts, which cannot now be detailed, show satisfactorily that the presence of a diseased tree among healthy ones, has some deleterious influence, direct or indirect, upon the health of its neighbors—but in what way, we are as yet unable to say. Our best mode of guarding our trees against this destroyer is in conformity with this idea of a communication of disease from one tree to another; which is, to *exterminate diseased trees, and replace them with such as are healthy*. It is found in practice desirable that the extermination should extend to *all* affected trees, leaving none. And the greater the territory over which this measure is enforced, the better. I cannot, from my own experience, say confidently that it makes any difference whether the trees are rooted up when in full leaf, or after the leaves have fallen.

NOYES DARLING.

New Haven, Ct., Feb. 10, 1846.

CORN AND COB CRUSHER, &C.

.....

MR. TUCKER—Suffer me to say a few words—

1st. In regard to “Hussey’s Corn and Cob Crusher.” I purchased one from the maker two years since, but from various causes, did not get it in operation until last fall. I am much pleased with its performance, and believe it will accomplish all that is promised for it. In addition to the crushing of the corn and cob, I have made a hopper for it, by the aid of which I have for several weeks been grinding shelled corn and peas for my fattening hogs. It grinds beautifully and rapidly, and by putting the hominy in soak with boiling water, my hogs eat it more readily, and I think fatten faster than they have ever done by any previous process. I think the machine worth the money and trouble expended, if for no other use than this. I see that a competitor has entered the lists with Mr. Hussey. I mean Pitts, and he promises much for his Crusher. I have seen an account of it but not of the manner of its operation or its price; should like to see both.

While on the subject of crushers, I notice a remark of yours in the Dec. No., in reply to “A Subscriber,” (Greenville, S. C.) p. 389, where you say that you “presume it is better to grind the article in mills calculated for the purpose,” and the idea is suggested, that the “cob injures the mill stones.” I only notice this to say, that there is an invention in North Carolina, and for sale by the Comptroller of the State, which professes to grind *cob*, *corn*, and *shuck*, all together, which is adjusted upon the ordinary mill stone, and which the inventor says, I think, will not only not injure the stone, but will accelerate its speed in grinding meal. I have not seen one of them in operation, but from the statements made, must be valuable.

.....

THE SWEET GUM

2nd. Please say to your correspondent Solon Robinson, whose “Notes of Travel” always interest me, that if he will visit me in North Carolina, I will prove to him by ocular demonstration that the “sweet gum’s only value is” not for making tea for “bowel complaint,” but it is well adapted to other purposes. During the past summer I have made considerable use of the timber for building, and it is one of the prettiest woods, and is susceptible of as fine a polish as any wood in the southern states. There is now before my eyes

some panelling of this wood, and the beautiful waving of the grain is almost equal to Mahogany. There is indeed an objection to it, and that is its tendency to warp, but by proper attention, this may be guarded against.

.....

SOAKING SEEDS IN AMMONIA.

3d. Permit me to corroborate a statement made by a correspondent of yours at Princeton, N. J., p. 311, in reference to the soaking of seeds in Ammonia. Like him, I was induced to take the bait, and like him, found by experience, that every new born theory is not reducible to successful practice. At the time of sowing oats last spring, I steeped one bushel in the prescribed quantity, and endeavored to follow the directions of Mr. Campbell as literally as possible. The result was, that not one fifth of the seeds came up, and those that did, were but little if any better than their neighbors.

I think Mr. Campbell, and the Highland Society, must try again. But I do not regret the experiment, as it is the only way we are to find out the excellent and the worthless. I hope your friend at Princeton will not be discouraged.

Truly yours,

WILL: H. WILLS.

Rocky Hill, N. C., 27th Dec., 1845.

SPECIAL MANURES.

.....

No one who has expended the large sums required by stable keepers for manure, can fail to be interested in the subject of special manures. The idea conveyed by this term is that certain fertilizers are peculiarly adapted to particular plants or soils. Thus we know that plaster of Paris is often extremely beneficial to clover. Experiment and the better established opinions of practical men have shown that clover is not the only crop that is brought forward in a marked degree by a particular and simple manure. There is an abundance of evidence to show that potatoes if not increased in the crop produced, are at all events much improved in mealiness and flavor by a free use of lime. Ashes, and especially those which have been leached, are well known to improve the grass crop in a marked degree.

Other instances of less agricultural importance might be cited, as the action of salt on asparagus, and of lime on apple and pear trees.

From the preceding remarks will be understood what is meant by a special manure; but there are several points pertaining to this subject worthy of a short consideration.

In the first place—are the special manures economical? This is with the farmers of the sea-board, of primary importance, for our soils cannot dispense with manure, and that from the farm-yard is so expensive as to consume all the profits. To answer this important question, it is necessary to consider what yard manure in its agricultural operation really is. It is a compost made up of organic and saline parts, or, in other words, of a very rich vegetable mould, and of common salt, plaster of Paris, bone earth and mild lime, or salts similar to these. In the form that it comes to the farm it also contains much water, and is liable to fermentation, which gives out heat, useful in market gardening, but of less importance to the farmer. One hundred parts of yard manure in the ordinary state, contains 79.3 parts of water, 6.6 parts of earthy and saline matters, and 14.1 parts of vegetable mould. (*Gardner’s Farmer’s Dictionary*.) So that when we haul out 1000 weight of first rate farm-yard manure, we carry to the field 793 lbs. of water; 66 lbs. of earthy matters as salt, gypsum, and bone earth, and 141 lbs. of vegetable matter. It will therefore take 1333 lbs., or two thirds of a ton, to yield one hundred lbs., or less than a bushel of saline and earthy matters. The exact proportions of the salt, gypsum, &c., in the earthy matters of yard manure will depend upon the litter used. In the case of wheat straw there will be in 100 lbs. only about 8 pounds of bone earth, 3 pounds of gypsum, and 2 lbs. of salt, 15 lbs. being mild lime, and the rest common sand. The composition of the ashes of oats, hay, and other fodders, is also given in *Gardner’s Farmer’s*

Dictionary. Proceeding with the composition of the oat straw—it appears, therefore, that if we should apply to every crop yard-manure, and the fertilizing effect be due only or chiefly to the bone earth, it would have been very much cheaper to have added the bone earth at once, and not in the compost of yard-manure. If this should be the true cause of fertility, say to a crop of oats, it will be necessary to add as much as ten tons of yard manure to give to the soil one bushel of 110 lbs. of bone earth. No one will doubt that results like this do occur, when it is so well known through the pages of the Cultivator, that a few pounds of bones in a dissolved state, are capable of producing the largest crops of turneps, and some 60 lbs. thus prepared are now used in England and Scotland, in the place of the sixteen and twenty bushels formerly employed. We believe, therefore, that from the preceding remarks it is abundantly clear that the use of special manures is preëminently economical, and a great improvement in farming. But there is one condition necessary to the economical application of such fertilizers, and this is, that we have an accurate knowledge of the particular substance required by any given crop, and the conditions when it is indicated. To know when it is indicated, we must ascertain whether it be already in the soil, either naturally or by the use of previous manures; on this point we have nothing to offer at present.

How is the farmer to know what particular substances any given crop requires? This, next after the question of the economy of special manures, is the most important. A short time since it would have puzzled a wise man to have answered such a question to the satisfaction of the farmer; the answer might have been given in terms intelligible to a chemist, but we farmers are not of that craft, and probably never will be. We might have been told that there is a close connection between the ashes of a plant and the special manures it required. This connection unquestionably exists, for we know that gypsum forwards clover because both contain sulphur; lime improves potatoes, because the tops of that vegetable contain lime abundantly; turneps are improved by bone earth, because they require phosphorus, which abounds in bones. From these instances it is clear that we may ascertain what the special manures of any plant are by examining the composition of the ashes. But what are we to make out of sulphuric acid, 0.5; chlorine, 0.02, and such terms which are to be met with in all the analyses to be seen. But in the Farmer's Dictionary, by Dr. Gardner, recently published by Harper's, we find what has never before been drawn up for the farmer, an account, not only of the analysis of the ashes of all farm plants, but an interpretation of it—the special manures for each crop are given at length. For instance, under the article—“**CORN—Special Manures,**”—we have the best analysis of Indian corn given, and then, exactly what every farmer wants to know—the practical deductions from this analysis—“that a special compost of poudrette or stable manure, bone earth and ashes, would be very valuable” for the corn crop. We also learn that from the analysis of corn, “it preëminently requires putrescent matter and bone earth, without which latter the seeds are imperfect.” We believe that the Farmer's Dictionary is one of the most valuable works ever published for the practical farmer. No where else is any information on the important subject of special manures to be found. The work contains also the meanings of the hard technical words, now so freely used by some writers.

New-York, 1846.

C. E. McC.

BONE DUST.

A correspondent with the signature of “Rambler,” furnishes us with an account of an experiment made by ANDREW COE, of Middletown, Ct., with bone dust in raising turneps. The soil on which the trial was made, is represented as being thin and worn out. Twenty bushels of bone dust was applied to the acre, and the turneps sown about the first of August. The crop was luxuriant, and is attributed wholly to the bone dust.

The writer states that he measured a piece in the lot six feet square, and by computation found the product to be at the rate of 1210 bushels per acre. The field, however, he says, would not have averaged that, but would have averaged half the quantity—say 605 bushels per acre. A space left through the middle of the lot, a rod and a half wide, without any bone or any other application, produced nothing worth harvesting.

MORGAN HORSES.

THE editor of the *Southern Cultivator*, published at Augusta, Ga., states that, by the “many glowing accounts of the great excellence of the Morgan Horse,” he was induced to make arrangements for the purchase of one for the improvement of the Southern stock. The “upshot of the business,” however, he says, is shown by the following extract of a letter from the person who had been commissioned to make the purchase:

“The Morgan horse has been run out these twenty years, and it is the merest gammon with jockies to talk about them. Everything in the country is now called a ‘Morgan,’ from the merest rat of a pony to a gaunt, long-legged, seventeen hand horse. We have what is better than the Morgan horses ever were, viz: the Messenger, Mambrino, and Duroc crosses. They are almost thorough bred, and are the most admirable roadsters that the world can produce. * * * It fairly makes me sick to see the miserable Canadian and other horses palmed off upon the south by glib fellows,” &c.

This article appeared in the March number of the *S. Cultivator*. In a preceding number, the editor had copied the remarks of Mr. WEISINGER, one of the editors of Louisville (Ky.) Journal, in reference to the Morgan horses. (See *Cultivator* for Nov., 1845.) The article from which we take the above extract, is said by the editor of the *S. C.*, to be “intended as a sort of counter-blast” to Mr. WEISINGER's remarks.

What the writer of the extract means by the expression—“the Morgan horse has been run out these twenty years,” we do not know. If he means that the original horse known by this name has been dead “twenty years,” it is no doubt true. If he means that all the stock got by this horse, have been dead this length of time, or even that they are now extinct, it is not true; unless Mr. WIER's horse *Chelsea Morgan*, or *Bulrush* has died within a short time. It is true that in consequence of the great demand for this stock of horses, and the great prices they have brought, they have become scarce; and there is no doubt that “miserable” horses have been “palmed off” in many instances as Morgans; but a man who would accept a “gaunt, long-legged, seventeen hand horse,” as one of *this stock*, must certainly be too ignorant of their well-known characteristics, to deserve pity for the imposition. But it is the acknowledged value of the *real* Morgans that has produced these results. It is not strange that a great demand for an article, should occasion counterfeits;—hence judgment and observation are always necessary to distinguish the genuine from the false.

That there is yet left at least one remnant of the progeny of the original Morgan horse, and that there are a considerable number of only the second generation from that horse, is known, and we are pleased that measures are being taken to preserve and increase this most valuable race.

As to the horses which are so much “better than the Morgan horses ever were,” (!) that are spoken of in the above extract, we should feel obliged if the editor of the *Southern Cultivator*, or his correspondent, will tell us where they may be found. We, as well as some of our friends, are just now in want of a few of the “most admirable roadsters the world can produce.”

In conclusion, we would refer the editor of the *Southern Cultivator*, and others who desire to know the true history of the Morgan horses, to our paper, vol. ix, pages 99, 110, vol. ii, new series, (1845,) pages 256, 352, and the present vol., pages 19, (Jan. No.,) 106, (April No.)

ANALYSIS OF MANURES.

ONE of the easiest kinds of analysis, as well as most useful to the farmer, is the analysis of manures. The fertilizing ingredients being nearly in an unmixed state, renders the determination of their proportions, much

easier, than where they are widely diffused through a soil. Hence the greater ease and accuracy connected with the examination of manures over that of soils.

Tube with
copper salt.

Tube with
potash & lime.

Test-tube
with manure.



Fig. 29.)

The introduction of new manures renders a chemical examination often of advantage. The following method of ascertaining the amount of ammonia in any substance, and constituting a very important part of the analysis of manures, is condensed from the London Gardener's Chronicle, and appears to be simple, expeditious, and accurate. It is used in the examination of guano. A common test tube (about 5 inches long and half an inch in diameter, and represented as the lower of the three tubes in the figure,) is taken, and a portion of the guano or other manure to be examined, is accurately weighed and introduced into it; 25 or 50 grains will be found a convenient quantity. A similar tube, but drawn at its lower end to an open neck, is then attached to the test tube by means of a perforated cork; a few fragments of asbestos are placed in the neck, to prevent its becoming choked, and it is then filled with caustic potash mixed with fragments of lime. Another tube, similar to the last, is then placed in like manner above, and the neck being also provided with asbestos, the tube is filled with coarsely powdered chloride, sulphate, or nitrate of copper, previously well dried. The three tubes, with their contents, having been weighed separately, the lower one containing the manure, is placed in a water bath, until all moisture is expelled. The moisture is all absorbed by the caustic potash, and the ammonia by the salt. The tubes are then to be disconnected and again weighed; the quantity of uncombined ammonia in the manure will then be shown by the increased weight of the upper tube containing the copper salt; and the quantity of water, by the increase of weight in the middle tube, containing the potash and lime. The next step is to determine the combined ammonia. To do this, mix the manure with an equal quantity of finely powdered quick-lime; shake them well together, and immediately connect the tubes as before; then expose the test tube to a low red heat, and the ammonia will be driven off. As it passes up through the copper salt, it gives it a fine blue color, and the operation may be known to be complete, when it ceases to extend any higher. The quantity is then determined by weighing as before.

The upper tube need not be so large as the middle one, nor the middle one so large as the lower. Thin vials with the bottoms off, might be made to do in the absence of tubes; but the weight of the glass would of course lessen the accuracy of the result. A delicate and correct balance is of the first importance.

POTATOES.

L. TUCKER, Esq.—The potato is most productive and more perfect in a moist soil,—not wet nor dry. A soil that is good for oats, wheat or corn, and that has had a crop on it the preceding year, will cause them to grow more rapidly and to mature earlier than they will on a sod. A rapid uninterrupted growth and perfect maturity, are indispensable for the production of a first rate potato.

Having selected a suitable place, draw out 30 two-horse loads of stable or yard manure to the acre, making about 100 heaps. As soon in the spring as the ground is in good condition to plow, spread the manure evenly,

and plow it immediately under. About the middle of May, plow it again, and harrow until it is fine and mellow. Furrow about two inches deep, and two feet nine inches wide. Potatoes that are of merchantable size are the best for seed. Cut such as require it so that you have three or four eyes to a piece. Put the pieces about ten inches apart in the rows, and throw on each piece about a tea-spoonful of plaster of paris. Cover with a hoe an inch thick. As soon as the young potatoes are three inches high, plow them, throwing the furrow from them. Dress them out nicely without bruising them, putting about half an inch thick of earth around the hill, and destroying everything else. As soon as any of the tops begin to lean, plow again, throwing the furrow to the hill, and dress out as before. Put a teaspoonful of plaster of paris on the tops of each hill, and the cultivation is done. When the tops are all dead, and the ground so dry that the potatoes will come out clean, throw them out with a spade or four tined fork, and pick them up within fifteen minutes after. If left long in the sun or light, they are injured. Have bins in your cellar that will not hold more than forty bushels a piece, with floors raised about four inches from the ground. Put your potatoes immediately in these bins, and shut the light out as much as possible, allowing a circulation of air through the cellar. Let all remain so until the weather becomes so cold as to make it necessary to close your cellar for the winter. Then close it, and cover your potatoes with a grass sod two inches thick, grass up. In the spring your potatoes will be as fine as when you dug them.

This has been my practice for the last two years, and I have had no rotten potatoes. R. K. TUTTLE.

Morristown, N. J., Jan. 12, 1846.

We see no objection to the management of potatoes as above directed, under ordinary circumstances; but where danger was to be apprehended from the rot, or potato disease, the mode might not in all respects be the best. For instance, though we believe the quality of potatoes for the table is generally injured by exposure to light and sun, yet it is an established fact that one of the best preventives of rot is to sun them before they are stored for the winter. The Commissioners appointed by the British government to investigate the causes of the potato disease, advise that potatoes designed for seed should be dried and sunned till they are green, in order to insure healthy and strong germination.—Ed.

FOLDING LADDERS.

A ladder, as every farmer knows, is one of the most necessary implements of the farm, and is required for numerous and constant uses

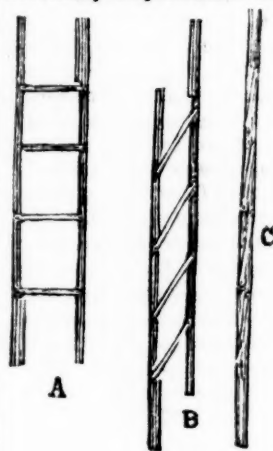


Fig. 30.

in ascending stacks, tops of buildings, gathering fruit, pruning fruit trees, &c. At the same time it is usually a very awkward implement, partly so because clumsily made, and always so essentially from its length. The selection of light, well seasoned, and strong wood, as material for construction, and giving the styles or posts the greatest thickness only in the middle where most liable to break, would render them more convenient. In addition to these, if the ladder is made in the folding form, it becomes still more neat and portable. The accompanying figures show this mode of construction. A exhibits the ladder as open for use; B, the same half shut; and C, entirely shut. The rounds, which are made small, and of the strongest wood, turn on iron pins passing through the poles. This ladder has one great convenience in pruning apple-trees, as it may be thrust through thick branches, while shut, like a pole, without bruising the tree, and afterwards opened for ascent.

COLMAN'S EUROPEAN AGRICULTURE—PART V.

CLASSIFICATION OF SOILS.—On this point Mr. Colman uses no "scientific distinctions," preferring such terms as even the commonest farmer can understand. He thinks that "for all practical purposes, soils may be ranked under five different heads—sandy, clayey, calcareous, peaty, and loamy. A sandy soil is that in which sand abounds; clayey, in which clay; calcareous, in which lime in some form prevails; peaty, in which peat; loamy, in which a rich loam abounds." * * *

"In general, where there is found in a soil 80 per cent. of sand, it must be pronounced a sandy soil; but it is not always easy to class a soil which is of a mixed character, and say what kind of element predominates."

When speaking of the "PHYSICAL PROPERTIES OF THE SOIL," he alludes to a theory advanced by Liebig in his late treatise on artificial manures, that the system of draining has been carried in England to an injurious extent, by allowing the soluble parts of manure to be washed down beyond the roots of plants. Liebig's language is,—"The system of drainage which of late has been so extensively followed in England, brings the land into the state of a great filter, through which the soluble alkalies are drawn off in consequence of the percolation of rain, and it must therefore become more deficient in its soluble efficacious elements." He, Liebig, then goes on to state that he has "succeeded in combining the efficacious elements of manure in such a manner as that they will not be washed away; and thus their efficacy will be doubled. Owing to this, the injurious consequences of the present system of draining are removed; agriculture is placed upon as certain principles as well arranged manufactories," &c.

In reference to the distrust which Liebig would thus throw on the practice of draining, Mr. Colman remarks, that the beneficial results of the system have been so marked and striking, that it may, in his opinion, still be pursued "with a good degree of confidence. He refers to an example he had lately seen where a field of turneps, on a thin, dry, and light soil, in which sand abounded, the beneficial effects of thorough drainage" were shown in the crop being better by one half on the drained, than on the undrained portion of the lot. In relation to the brilliant results which farmers may be led to expect from the use of the artificial compound spoken of, Mr. C. expresses some doubts, not however, he says, in any captious spirit, knowing how much agriculture must in the end, owe to science, and being ready to hail with the highest satisfaction any triumph it may achieve."

In reference to PEATY SOILS, which are formed principally of decayed vegetables, it is observed—"If vegetable matter were, as is often reckoned, the best food of plants, it would seem as though no soil could be so fertile as that of peat. This is not found to be the case, however, but for reasons not so well established as the fact." In ordinary cases he thinks it must be admitted that—"the fertility of a soil essentially corresponds to the amount of vegetable matter found in it, whether it supplies, in any degree, the actual substance of the plant, or, by its gradual decay, be merely the vehicle of transmitting for its nourishment the gases out of which its substance is to be composed. It is certain however, whatever may be the philosophical reason in the case, that pure unmanufactured peat does not form a nourishing soil or substance for plants, other than those to which a wet soil is particularly congenial, and that it cannot be made so but under a particular management which I shall presently describe. The vegetable matter of which it consists, being once thoroughly reduced, and mixed with other substances of an alkaline character, is rendered a most enriching manure for most kinds of land, though a much less substantial one than is generally supposed. One of its great uses is that of an absorbent, taking up the liquid matters which would otherwise be lost."

Mr. Colman informs us that the reclamation of bog lands has been carried on to a great extent in England and Ireland. In the latter island, he witnessed the ope-

rations of one company which has at this time, five thousand acres of bog in the process of improvement. He thinks the peat bog of the United States, as well as England, "may be rendered in the highest degree productive and profitable." In relation to the bog of salt marshes, it is remarked that they are of a "different character from fresh-water peat-bog." The vegetable matter being chiefly marine plants, "which have served as a kind of net-work to collect the earthy matter brought among them by the tide. The quantity of salt intermixed with these deposits, gives them a peculiar character. They are favorable to the production of plants congenial to them; but other plants cannot be made to grow upon them till they are thoroughly decomposed; and in that case no soils yield a more luxuriant or richer vegetation. In truth they require to be reduced to the state of fine mould, and the greater portion of the saltiness exhausted, which time itself will effect where they are kept from the access of the tide, in order to be in a condition favorable to the growth of other than marine or saline plants."

Under the head of HUMUS, or VEGETABLE MOULD, Mr. Colman enters somewhat into a discussion of the point assumed by some writers, that humus, or vegetable matter, is not taken up as the food of plants. He quotes from Liebig in reference to the fertility of the soils in the neighborhood of Mount Vesuvius. "The land in the vicinity of Vesuvius," says Liebig, "may be considered as the type of a fertile soil, and its fertility is greater or less in different parts, according to the proportion of clay or sand which it contains." These soils, on account of their origin, it is thought "cannot possibly contain the smallest trace of vegetable matter; and yet it is well known" continues Liebig, "that when the volcanic ashes have been exposed for sometime, to the influence of the air and moisture, a soil is gradually formed in which all kinds of plants grow with the greatest luxuriance. This fertility is owing to the alkalies which are contained in the lava, and which by exposure to the weather are rendered capable of being absorbed by plants." But "thousands of years," it is added, "have been necessary to convert stones and rocks into the soil of arable land."

Mr. Colman thus comments on the above:—"General experience would seem to show that soils without any vegetable mould are not productive, and most practical farmers would prefer, of all others, a soil where the vegetable matter, well compounded, existed in abundance, forming, as it is termed, a deep and rich loam. But it would seem that in the case to which Liebig refers, thousands of years are necessary to render a mass of lava fertile, and in such a case it might be fairly presumed that some vegetable matter might accumulate and produce the desired mixture." Mr. Colman, however, observes, in further considering the subject, that the inference that Liebig believed the vegetable matter in the soil to be of "no moment," might not be quite just. "He does," says Mr. C., "consider the humus of the soil as furnishing, in its decay, a necessary supply of carbonic acid to the plant in the process of germination, though of no use after the plant gets above ground; and he supposes that the manure of animals fed upon the product of the land return to the land those mineral elements which they took from it, and which are indispensable to their perfect formation. This may be so, and in this view, he does not deny the value of vegetable mould, or humus. But certainly," concludes Mr. Colman, "there was nothing improbable in the supposition that plants might have found some portion of their food in those decayed substances which once constituted a part of the substance of their predecessors. Indeed, I see as yet no sufficient grounds to conclude that their office in supplying carbon to the growing plants ceases as soon as the plant is above ground, and able, as he supposes, to gain its whole supplies for itself from the atmosphere. It is quite certain that the growth of a forest would be checked, and the amount of humus in the soil be diminished, if all the decayed leaves and limbs which fall from the trees were constantly removed; and it is as certain that the continual cultivation of land with supplies of manure, exhausts its vegetable

mould; and that the application of vegetable manures to crops in a growing state is often as efficacious as when applied, or plowed in, with the seed."

Mr. Colman states that he does not undervalue scientific agriculture. "Science," he says, may do as much for agriculture as for any other department of business, or art, or health, or comfort, or enjoyment." But for the present he thinks "the practice of agriculture is very much in advance of the theory of agriculture."

Mr. Colman pays the "ENGLISH CHARACTER" a handsome tribute. He states, as a conclusion resulting from close observation, that "they are an upright people"—that in general, "their habits, like their plowing, are direct and straight forward, and are opposed to all baulks and all tortuous windings. I thank God," says he, "that the blood of such a people flows in my veins, for I look upon honesty as the true nobility of man, and the only aristocracy to which my heart burns to pay its spontaneous and unclaimed homage."

A large portion of this number is devoted to the subject of **PLOWING**. The perfection of plowing, he says, consists in its being done "exactly as you wish or require to have it done." He speaks in the highest terms of the excellence of English plowing, which he states, is done in all particulars, "exactly according to a prescribed form"—as perfect, he declares, "as a ruffie just come from under the crimping iron."

He describes particularly a plowing match at Saffron Walden. The furrow slices were required to be seven inches in width, and five inches in depth. It was not a match against time, but the work was to be executed within a certain time. Such was the exactness with which the work was performed, that he feels confident there was not in the whole field "the variation of an inch in the width or depth of the furrow, or a single crooked line, or even one solitary baulk. Two horses only were used to a plow, and each plowman was his own driver. "I went over the the field," says Mr. C., in an extacy of admiration at its uniformity, neatness, exactness and beauty." From Mr. Colman's account, the skill of the English plowmen would seem to be complete. Finishing the last furrow of a land in a proper manner, is known to be no easy matter. Mr. C. thus describes the manner in which this was performed by one of the competitors at the plowing match mentioned. "In the case to which I have referred, the last land remained at the close, a single unbroken strip, of equal width, from one end of the field to the other, lying like a stretched out ribbon, which, as the plowman came down the course, he turned without breaking, and with perfect precision, from one end to the other. In this instance, the horses seemed almost as well trained as the driver, and inspired with an equal emulation." It is observed that "two circumstances contribute strongly to this perfection of English plowing. The first is that boys are trained to it as early as they can possibly be employed with safety. The second is the division of labor, which generally prevails, so that individuals devote themselves, to a degree exclusively, to one particular object."

In relation to "GENERAL RULES FOR PLOWING," we are informed that "the depth of plowing varies in different soils and for different purposes. The average depth may be considered as five inches, but no direction on this subject will be found universally applicable. Three of the most eminent practical farmers with whom I am acquainted here, plow not more than three inches; but the surface mould, in these cases, is very thin, and the under stratum is a cold, clammy chalk." Mr. Colman observes, in reference to these, and some other examples where even shallower plowing had been practiced, that "they are well worth considering. I do not understand," he says, "that these practices at all militate against the advantages to be obtained from subsoiling. In cases where subsoiling and thorough draining are not applied, this shallow plowing may be preferred, as the mingling of the cold and inert subsoil with so thin a surface of vegetable mould, would doubtless be prejudicial, at least for a length of time."

But, says Mr. Colman, the general rule in England, "when the soil admits of it, and manure is abundant, is

that of rather deep plowing—five or six inches is the average; in many cases much more than this. The loam, or vegetable mould, is without question, the great source or medium of nourishment to the plants. Be it more or less deep, it is always safe to go to the bottom of this, and by gradually loosening a portion of the subsoil, or lower stratum, and incorporating it with the mould, and rendering it accessible to the air and light, it acquires the nature of mould, and the whole arable surface is enriched."

As to the manner of turning the furrow-slice, we are informed that two modes are adopted—"the one to lay the furrow-slice entirely flat, shutting its edge exactly in by the edge of its neighbor; the other to lay it at an inclination of 45 degrees, lapping the one upon the other." Mr. Colman thinks the former mode, "where land is to be sown with grass-seed, and as the phrase is with us, laid down, is, undoubtedly, to be preferred," and he is inclined to the opinion that this mode is preferable in the United States for any grain crop; but he adds, (what is evidently important,) that the higher temperature which prevails in the United States may be expected sooner to decompose the vegetable matter thus pressed down, "and thus sooner furnish a pabulum for the growing plants, than in a climate where, in a much lower and more even temperature, the decomposition cannot be expected to take place so rapidly." He states, however, that the mode of turning the furrow-slice at an angle of 45 degrees, which evidently leaves the ground more loose, and exposes a larger portion of it to the air, is generally preferred in England. He describes this mode:—"To avoid having any of the grass protrude itself between the furrow-slices, they have here, what I have never seen in the United States, [we have seen it here, in the hands of one or two Englishmen,] a skim colter, that is a miniature plow-share, or blade, placed under the beam, and so adjusted as to cut an edge from the furrow-slice as it is turned over; this piece so cut off, at once dropping down, and being buried under the furrow-slice as it goes over. The consequence is that there is no grass on the edge of the furrow-slice to show itself, and great neatness is therefore given to the whole work." He describes another mode of plowing which he has sometimes seen practiced, "by which the furrow-slice is not merely lifted, but may be said to be rolled over, or twisted in a sort of bag fashion." This was thought to be "principally owing to the form of the mould-board, for no workman could have done it with a straight or convex form of mould-board. It would seem to render the soil more friable and loose; but every departure from a straight line, or wedge form of the mould-board, evidently must increase the drought."

Mr. Colman remarks that—"the great object of the English farmers, in plowing, seems to be the thorough pulverization of the soil." It seems reasonable that this should be the primary object every where. They plow and scarify and harrow their lands repeatedly. The propriety of the practice of breaking and tearing out the turf, bringing the grass and roots to the surface, that they may be raked up and burned or carried away, Mr. C. deems quite questionable. It may, he admits, be a good mode of getting rid of the couch, or twitch grass, (*Friticum repens*), which in many instances is exceedingly troublesome; "but" he says "where it is a mere clover ley, or an old grass pasture or meadow, the taking out or removing the vegetable matter seems to be a serious waste."

The advantages of **SUBSOIL PLOWING**, Mr. Colman thinks are very considerable. Its advantages over very deep plowing with a plow of common construction, are that in the one case the cold and inert soil is brought to the surface, "in a condition unsuited to the purposes of vegetation, and that much time and expense are lost before it can be restored to fertility;" but in the other case, the substratum is gradually brought to intermingle with the top soil, and cultivation is not interrupted, but rather benefited by the intermixture. "Another and very great advantage derived from subsoiling," says Mr. C., "is in the admission of air and heat to the loosened soil, by which it is improved, and better sub

serves the purposes of vegetation, and at the same time, opportunity is given for the free expansion of the roots of the plant." Another advantage still, is the opportunity afforded on some lands for the rain-water to pass off freely.

Several cuts of plows of various kinds, as well as other implements used for working the soil, such as grubbers, scarifiers of different kinds, harrows, &c., are given, followed by a chapter of "GENERAL REMARKS ON THE USE OF AGRICULTURAL MACHINERY;" in which is some excellent observations, showing that machinery not only lightens labor and increases production, but has also a favorable and happy effect on the morals and health of society. But having already extended our review to a great length, we are compelled to pass over the remainder of the number without further comment. The perusal of it has increased our confidence in the ability of Mr. Colman to execute the task he has undertaken, not only according to the original plan devised by himself, but at the same time in a manner which will, in the end, leave no ground for complaint. He will form a work, which in point of interest to the general reader, will be unequalled in its kind, and yet one which will lack nothing of the essentials to value as a compendium of practical facts.

We are informed that Part VI is now in press. Published by A. D. PHELPS, Boston.

SHEEP AND WOOL.

WE have lately received so many communications on this subject, that we are under the necessity of condensing several of them into one chapter.

From Mr. JOHN BROWN, of Akron, Ohio, we have a letter from which we give the following extracts:

"I think that really good, fine sheep may be found in flocks called Merino, and those called Saxon, (and I have experience of both,) and I ask, if either of these breeds possess any valuable trait, if that particular trait may not be preserved in their posterity, while the bad traits may be in a great measure bred out? I absolutely know, from my own experience, that this may be done; and for this very reason, I consider the few good Saxon sheep in the country as invaluable, on account of the quality of their wool. I have no desire to get up a new excitement about the Saxon name, but I should be glad to see the wool-growing community give so much attention to the subject, as to be able to discern a good animal from a very mean one. I know of thousands of wool-growers all over the country, who are keeping flocks whose wool will not average yearly thirty-five cents per pound, while at the same time they might easily get as much and more wool than they now do, that would be worth yearly in ready cash, seventy cents per pound. [Is not this rather a "large" calculation?—Ed.] This is abundantly capable of proof from actual sales made for the last ten years; but it can only be done by candid and careful comparison, sufficient to make persons tolerable judges of sheep and wool.

"I will mention some Saxon and some Merino flocks, as they are called, in which may be found a goodly number of animals such as no sensible and honest man can object to. I mention only a few from which might be selected good animals to breed from.

"The flock of Mr. Samuel Whitman, of West Hartford, Ct., are of good constitution, good form, very fine, and have thick heavy fleeces. The choicest animals I have ever seen, were either bred by Mr. Whitman, or are the descendants of sheep bred by him. The flock of Mr. John Marvin, of Woodbury, Litchfield county, Ct., cannot be exceeded for constitution, and they have very heavy fleeces, though the fleeces are not quite so uniform, nor quite so fine, as those of Mr. Whitman's flock. The flock of Mr. Charles B. Smith, of Wolcottville, Ct., strongly resembles that of Whitman, in all points, and were, to some extent, derived from it. Mr. Smith is a judicious breeder, and his sheep are excellent. The flock of Mr. Thomas Swift, of South Amenia, Dutchess county, N. Y., combine to

a great extent, all that can be desirable in fine sheep; viz: fair size, good constitution, good weight of fleece, and an excellent quality of wool. I have seen some choice animals from Vernon, Oneida county, N. Y., but have not been able to examine whole flocks, which is the true way of judging for breeders. So much for Saxon flocks.

"I will now mention some that are called Merino, (no matter what they are,) which have a good number of animals in each of the kinds I have described—that is, heavy, fine fleeces of *real wool*. The flocks of Messrs. Samuel Patterson, Samuel Cole, Wm. Brownlee, Matthew McKeever, — McDowall, Wm. More, John Rankin, and others, in Washington county, Pa. Messrs. John Smart, John Hall, and others, in Beaver county, Pa., Messrs. Jesse Edgington, Talbot Hammond, of Brook county, Va., Messrs. George Purcell, Joseph Morgan, Richard Ridgley, — Gilmer, and others, in Ohio county, Va., Adam Hildebrand, and Thomas Noble, of Stark county, Ohio.

"The noise about a great deal of animal oil to preserve the health of sheep and the wool from *dead ends*, is a superfine humbug. Every healthy animal, in good condition, has enough of it to meet all the wants of the manufacturer and the consumer. For a sheep to be very black or yolk, does not prove it to be a good animal, hardy, heavily woolled, fine, or fit to breed from. Some very choice animals are heavily coated with yolk, while others of equal worth are not so; as many often are seen in the same flock, and all of one blood."

From Mr. J. S. PETTIBONE, of Manchester, Vt., we have a letter, accompanying some samples of wool. Several of the samples are from very old ewes, which, on account of their blood and qualities, are kept to rear lambs. He states that he has a "hospital flock" of a dozen, all of which are over ten years old—one is *fifteen* this spring, and another will be *nineteen* in July next. The latter he says was from an ewe purchased in 1822, of the Humphrey importation. All of them, he says, are in good order, and bid fair to rear lambs this season. The two oldest reared lambs last season, samples of the wool of which are sent. The wool is good. The last year's lamb, (a buck,) from the fifteen year old ewe, weighed 158 lbs. on the 3d of March last. The three oldest ewes, he states, "when in their prime, averaged over five lbs. of wool each, and reared a lamb." He thinks they will this season average over three pounds each, of clean wool. Mr. P. thinks these ewes by no means "too old to be profitable. It is," he says, "much less expensive to rear a buck from a good blooded old ewe, than to send 300 miles and pay from \$25 to \$200 for a buck that may prove to be of little value." The ages of Mr. P.'s ewes are certainly remarkable, and show not only the tendency of the Spanish sheep to longevity, but the good care that has attended them. Mr. S. makes some good remarks in regard to selecting sheep for breeders. He thinks particular attention should be given to the evenness of the fleece as to quality. He says the shoulder is not unfrequently fine, when other parts of the fleece are coarse—that the coarse flank, with an occasional coarse hair, shows impurity of blood." He says "it is the long staple, thickly set, that makes a great fleece," and that this kind of fleece may be produced "fine, soft, silky, and free from gum."

To destroy ticks, while the fleece is on, Mr. P. directs to scatter Scotch snuff among the wool, and after they are sheared, to dip them in a decoction of tobacco, which, he says, will kill the ticks and prevent the scab. The "grub in the head," he thinks does but little injury to sheep that are well fed. He says he has tried various prescriptions to prevent the egg being deposited. He has tarred the noses of the sheep, and blown snuff up the nostrils, but all failed. But at last, he has found a "sure remedy." "It is the same the Dutchman used to make his horse slick. He rubbed the horse's back with the oats he had breathed on over night." The secret, of course, lies in giving plenty of food. [For our own ideas on the sheep-bot, or "grub in the head," see last vol., page 285.]

A correspondent at Cornwall, Vt., with the signature of "A Subscriber," sends an article on the Sheep of Vermont, together with handsome samples of wool, which he states are "from prize ewes exhibited at Vergennes, and at New-York city, in October last," now in his possession.

In regard to the introduction of the Spanish sheep into this country, and the advantages which have accrued therefrom, the writer well remarks, that—"farmers are more indebted to such men as Jarvis, Humphrey, and Livingston, than to some men of greater pretensions, who, in watching the shifting currents of popular opinion, lose sight of the agricultural interest." He thinks the natural advantages of Vermont are great for producing wool, and that some of the flocks will compare well with those of other states, "yet as a whole there is need of vast improvement." He states that the last census of Vermont showed that she possessed "about 1,700,000 sheep," and that the average weight of the fleeces "is two pounds and three ounces." [We suppose this to include lambs, as they were generally included in the census. This lessens the average considerably.] He sets the price of their wool at thirty cents per pound, for the last five years, which gives for each sheep, "sixty-five cents" per year. For the "surplus" sheep, he says, the farmers have usually obtained from 83 to 150 cents per head. Thus in many cases the profits of sheep-husbandry are small. But, "by a judicious application of means," he thinks "the net profits of the sheep of Vermont can be doubled." The means are, breeding from sheep of the best qualities. "For this purpose," he says, "the best flocks in the country should be examined; agricultural papers, and treatises on sheep should be consulted." In this connexion he recommends Morrell's "American Shepherd." Suitable shelter and food are also mentioned as among the requisites to improvement. A cross with a good Merino buck, he thinks, "will add from eight to twelve ounces to the weights of each fleece, in ordinary flocks." He mentions the flock of A. L. BINGHAM, of Cornwall, as one of excellence.

S. N. HAWES sends us an account of the flock of TYLER STICKNEY, Shoreham, Vt., which he thinks a very good one, Mr. Stickney. it is stated, bred the Merino bucks *Fortune* and *Vermont Hero*, which have heretofore been noticed in the Cultivator.

We have received from Mr. JOHN H. NETTLETON, of Watertown, Ct., several samples of Merino wool from his flock. Mr. N. exhibited some excellent bucks at the N. Y. State Show at Utica, and from all we can learn, his flock is a good one.

We have also received several samples from Mr. J. S. PETTIBONE, Manchester, Vt. They show well as to fineness, and are particularly clean and white. Among others we notice some very fine and handsome samples taken from an ewe, nineteen years old. She reared a lamb last season and is expected to do the same the present year. A few days since we saw fourteen head of Mr. PETTIBONE's sheep, which had been purchased by Dr. MILLER, of Cortland. We examined several of them which we thought very good animals—the wool long, soft, and white.

SORE LIPS IN SHEEP.

In reply to L. N., Chataque Co., (see current vol. p. 69,) Mr. REED BURRITT states that he has had that disease among his sheep this winter, and cured it by applying a little tar, with a small wooden paddle, and afterwards giving the sheep in their feed-troughs a mixture of two parts salt with one of rosin. The sheep got well in a short time, and have had no symptoms of the disease since.

PREMIUMS ON SHEEP.

Mr. REED BURRITT suggests that it would be proper for the New-York State Ag. Society to require that all sheep entered for premiums, should be in the same situation as to their fleece—that is, that all should be shorn

the season they are exhibited, or that none of them should be. He thinks that no fair comparison can be made between a sheep with a fleece of fifteen or sixteen months growth, and one that had been shorn within three months of the time of exhibition. The length of wool in one case, he thinks, disguises the shape and size of the animal, by which deception the judges or committees are often led to make a different decision from what they would do were all the subjects of competition under the same circumstances.

FOOT-ROT IN SHEEP.

We have received an able article on this subject from Mr. J. T. NATHORST, Mt. Heathy, Hamilton county, Ohio. The chief object of the communication is to show that the idea of our correspondent "GRAZIER," in reference to the non-contagiousness of foot-rot, is erroneous. As we have already published several articles in reply to this position of "Grazier's," and also given our own views of the subject, it seems to us that nothing further is needed to correct that error. We however make a short extract from Mr. N.'s letter, which will be read with interest:

"In the year 1829, my father bought four hundred sheep in Saxony for the government in Sweden, my native country. He had previously on hand over one hundred Spanish Merinos, also a Royal flock. When the Saxons arrived at their destination, (my father's farm,) they were sadly affected with foot rot; perhaps brought on by being driven a great distance over alternately hard and muddy roads, if not caught from diseased sheep while travelling. The Saxons were kept strictly apart from the Spanish Merinos; nevertheless, in a short time, the disease in its worst shape broke out among the latter. We accounted for it by the fact that they had been driven through the same lane to the pasture."

Mr. N. states that the foot-rot had never been known in Sweden till its introduction as above described.

INFLUENCE OF STOCKS ON GRAFTS.

L. TUCKER, Esq.—I notice at page 368 of your December number, an article upon the influence of the stock upon the graft. The remarks as to a dwarf or slow-growing stock retarding the development of the scion, and a vigorous growing stock advancing its development, are facts so long proven that they admit of no argument. But the writer, as well as many of his predecessors, is entirely in error when he ventures the assertion that "*Grafts do not affect the stock, that is, the scion does not impart any of its distinctive qualities to the part of the tree below the point of insertion,*" and that "*it appears clear, therefore, that during the life of the individual, the point of junction formed by the meeting of the stock and the scion, constitutes a line of demarcation, a cross which the influence of either cannot pass.*"

In proof that there exists a certain degree of influence, I will now state that if a bud or graft of the *Prunus Chamæcerasa*, or Siberian Weeping Cherry, is inserted in a stock of the Mazzard, it will cause its roots to become fibrous, whereas naturally they are very deficient in fibres, and if a bud or scion of a peach tree that is diseased by the yellows, is inserted in a healthy peach stock, it will impart the disease to the stock, and any shoots which afterwards spring from the stock below "*the line of demarcation*" will be diseased. As to an apricot scion producing plums, that is out of the question, and the Philadelphia gentleman who supposes so has forgotten as to the stone he planted, or he may have planted an apricot stone that failed to vegetate, while a plum stone planted or accidentally dropped there, may have sprung up. At all events no such transmutation could take place any more readily than could the silly supposition of wheat changing to chess, or that a cow could produce a colt as its progeny.

WM. R. PRINCE.

Prince's Nurseries, Flushing, Feb. 10, 1846.

DOWNING'S FRUITS AND FRUIT-TREES OF AMERICA

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MR. DOWNING, by his admirable and excellent works on Horticulture, has become a public benefactor, and his reputation, as a native author, is a matter of lively pride to thousands of his countrymen. I shall therefore feel no delicacy in making a few remarks on his works, in the pages of the Cultivator.

His volumes on Landscape Gardening and Rural Architecture, have created a new era in rural taste in this country. Over the whole country, it is plainly seen that, from the publication of these books, the dawn of real taste in cottages and grounds commenced. The elegant, the graceful and the expressive,—before so dim and obscure,—Mr. Downing has rendered clear and significant to the eyes of his countrymen.

But I wish to speak now more especially of his last work, the "Fruits and Fruit Trees of America."

This is his most useful and most laborious work; and after a pretty intimate acquaintance with all the best English and Continental works on Pomology, I must express my humble opinion that it is by far the most perfect treatise on the subject ever issued. I am assured by the publishers that *five large editions* have been sold since its first issue—a success which has no parallel in any work in gardening literature. It has penetrated to every part of this country. Its adaptation to our soil and climate, its systematic arrangement, the minute practical observation evinced in every page, and above all, its clear and perspicuous style, have contributed to its great popularity. They will contribute every day more and more to its greater usefulness.

I have noticed, however, in some quarters, a strong disposition to attack this invaluable work on Pomology—to distort its meaning, and deny its merits. Because a work which every one admits, from the very nature of its subject, must embrace errors, really does contain some, this small party of fusilleers have opened their warfare against it. They have affected to deny its facts, condemn its heresies, and decry its want of originality.

Unfortunately they have nearly all belonged to a class so evidently interested in disproving certain home-truths in this work—certain habits of miscalling sorts—dealing in spurious kinds—and cultivating in a miserable manner, (by which only we poor consumers suffer,) that their motives have been understood by the public at large.

"Envy will merit, like its shade pursue,
But like the shadow proves the substance true."

The Fruits and Fruit Trees of America have attracted eminent attention abroad. A late number of the London Gardener's Chronicle contains flattering commendations of the work from the pens of Lindley and Thompson.

The master "*heresy*" with which Downing is charged by some of his critics, is that of attacking the theory of Knight and others, respecting the *duration of varieties* of fruit. He swept away with a clean stroke, the whole fabric raised by the late ingenious President of the London Horticultural Society, which was based on the idea that a given sort only lasts as long as its original or parent tree.

It must be very gratifying to Downing, and discomfiting to his critics, to see a late leading article in the first Horticultural paper in England, and written by the most distinguished of scientific horticulturists, Professor Lindley, who takes precisely the same ground on this "*heresy*," as that first taken by Downing, in the appendix to his work on Fruits.

I hope you will allow me space for the following brief and pithy extract from the Professor's article:

"We regard the notion that the races of plants wear out, as utterly baseless and visionary. It is very singular that not one of all those writers, who have been fatiguing the public eye, should have perceived that the very few facts on which they rely are susceptible of a much more simple interpretation than that given by Mr. Knight, and caught up by themselves. It is marvellous that they should have imagined that the common sense,

to say nothing of science, of the intelligent cultivators of the present day should accept for truth such an extraordinary exhibition of false reasoning. One would think all death or disease was exclusively the consequence of old age."

Here is Mr. Downing's greatest heresy proved to be ultra-orthodox! And now that I have proved myself one of his ardent admirers and disciples, I am

Respectfully yours, J. J. KING.
New-York, March 17, 1846.

CULTURE OF CARROTS.

.....

MR. TUCKER—This subject is too generally deemed of minor importance to the farmer, and of more trouble than profit; but from eight years experience, the writer of this article is convinced that it is worthy the attention of *all* cultivators of the soil, as a source of profit, and as a means of increasing the health of man and beast.

From 1000 to 2000 bushels of carrots may be raised per acre, on good land—1000 bushels per acre might be as common a yield as 40 bushels of corn. My method of sowing and cultivating this crop is described in the March number of the Cultivator for 1839. [On reference, we find Mr. Meacham's mode is in substance as follows:—First, the ground is plowed very deep—manured the year previous with "long manure" and "hog manure," quantity not stated—the furrows are harrowed level. Seed is sown by hand. Furrows for the seed are made by the hoe, the edge being reversed, twenty inches apart—the seed dropped from dishes held in one hand, taking out the seed with the other, and being careful to hold the hand close to the ground to prevent the wind from blowing it away. Covered with the hoe—giving only a slight covering, which Mr. M. thinks is best, as he believes a shower of rain will bring up the seed without any covering, if the soil is loose and light—thinks the seed is often lost by deep covering; brushes the ground over with the hoe as soon as the carrots begin to come up; when they get well up, plows among the rows with a horse, "again and again." When harvested, runs a strong team and plows as near the outside rows as possible, and deep turning the furrows from the rows; the hands follow after, and pull the carrots out with the hands.—ED.]

All kinds of soil, except wet, will produce good carrots. They may be sowed from the middle of April till the middle of June—probably first of May is the best time. For a number of years past, I have raised from 1000 to 1500 bushels per year. On rich soil, they will frequently grow to the size of five inches in diameter at the crown, and from one to two feet in length. They are profitable for every kind of live stock—more especially for milch cows in the fall, winter, and spring. I have known work horses kept throughout winter on carrots and hay, and they enjoyed good health and performed well.

I can give some facts which are definite and to the point, in regard to the importance and profit of carrot-raising.

Mr. David Bennett, a neighbor of mine, a judicious farmer of some 60 or 70 years of age, having never learned the value of carrots, thought them, as do many others, beneath the notice of the farmer? Last spring, he consented to cultivate six square rods, on condition that I would sow them, which I did. The season was dry, yet he harvested over 50 bushels of carrots from the ground, which is over 1,300 bushels per acre. He fed them at the rate of half a bushel per day, divided between a farrow cow of ordinary size, and a farrow heifer, three years old past. He commenced feeding them the first day of December last, and the result is, he has made since that time, from the cow and heifer, 130 pounds of good butter, besides having plenty of good milk for two persons through the winter—an increase of more than half the quantity of slops for the pigs, a saving of more than half the usual quantity of hay fed to his cows, and his cows are in better health and better flesh. His butter is of better color and flavor,

and of course in better demand in the market. He new agrees with me in regard to the importance of this subject to the farming community.

If there are 300,000 farmers in this state who will consent to try this experiment the present season, and make a fair report on or before the first of March next, I have no doubt the result would be equally favorable.

Again, Mr. Sherwood, of Richland, an enterprising young farmer, at my solicitation, promised to sow one-fourth of an acre. He reported to me yesterday. He obtained a yield of over 1,700 bushels per acre. [It may not be amiss to inquire how the yield was computed—whether by measure or by weight? If by measure, great care would be necessary or the yield would be overrated. Weight is unquestionably the fairest criterion. The Massachusetts rule, we think, is sixty lbs. for a bushel.—ED.]

I might go on and multiply instances—indeed I have never known an instance where the experiment has been faithfully tried, that has not resulted in abundant satisfaction. I respectfully request every cultivator of the soil in this state, to sow and cultivate in the best manner, the present season, on a good rich soil, at least a few rods of carrots. Let this be done, and we shall not hear so frequently of a scarcity and high price of hay and butter.

THOMAS S. MEACHAM.

Richland, N. Y., April 4, 1846.

WINTER FOOD FOR STOCK

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To enable herbivorous animals to assimilate their food, it is necessary that the nutriment should be disseminated through sufficient bulk to give distention to the bowels during the process of digestion. In addition to bulk, ruminating animals require also food of a fibrous nature to enable them to chew the cud—a function which experience proves is essential to health.

Green herbage is undoubtedly the food best adapted to the natural wants of these animals. It has been remarked by a sensible writer on this subject, Mr. W. C. Spooner, that good grass is the only kind of food in which nutriment, bulk, and succulence are combined in the proportions exactly suited to their habits. But in many situations where the wants of man render the keeping of stock indispensable, it is impossible to supply them at all times with what may be considered their most natural food; and for this, we must therefore adopt the most proper substitute.

Dried herbage of the kind which in its green state is most congenial to animals, is unquestionably the most suitable for the principal, or bulky part of their food during the time in which artificial support is required. Hence, hay properly made, from the most nutritive grasses, and from clover, is first to be chosen. But even with the best of hay, something more is required to form for the animal a perfectly natural food. Succulence is wanting, and in most dry fodder there is a deficiency of nutriment.

It is, of course, an object for the farmer to grow such crops as will furnish food for his stock at the least expense; but as circumstances in regard to soil, climate, &c., vary much, no rule of universal application can be laid down. The cereal grains, on account of the large proportion of nutriment which they contain, will always be profitably cultivated and used to a greater or less extent. And so far as the production of food for stock is required, Indian corn will take the first rank among grain-crops, in all situations adapted to its culture.

The deficiency of nutriment in any kind of dry fodder, may be supplied by adding to the animal's allowance, a due proportion of some kind of grain; but to furnish the animal with food most congenial to its natural habits, the addition of something more succulent would doubtless in many cases be of advantage. Hay or straw, with moderate quantities of grain, in some form, together with juicy vegetables, furnish the best substitute for grass.

In this country, potatoes, turneps, carrots, beets, &c. are sometimes cultivated, either for fattening animals, or as auxiliaries to dry food in wintering stock. The

question is often asked, which of these articles can be most profitably grown by the farmer? and as before suggested, the answer must depend on several circumstances. The writer has had some experience in cultivating and using all these vegetables, and a few of the conclusions induced by this experience will be briefly stated.

1. On cold and rough soils, or those of only medium and inferior quality, the potatoe is to be preferred.

2. On warm, rich soils, the carrot is most profitable.

3. Between beets and turneps, the latter should be chosen for the more thin soils and a cool climate, and the former for a deeper soil and a more warm and arid climate.

According to the estimates made by Thaer, Veit, and others, (and which it may be observed are supported generally by the writer's experience,) of the comparative value of these vegetables, two bushels of potatoes are equivalent in feeding animals to three bushels of beets, or to three of ruta-baga, four of white turneps, or two and three-fourths of carrots—allowing the same weight per bushel for each. Some estimate the carrot equal to the potatoe, weight for weight.

On rough and thin soils, potatoes can be cultivated with much less labor than either of the other vegetables named, and there are but few situations where a yield of at least two hundred bushels per acre may not be obtained. This would be equal to three hundred bushels of beets or ruta-baga, or four hundred of white turneps; and yet we are confident we have raised from two to three hundred bushels of potatoes per acre, in situations where neither beets, turneps, nor carrots would have given a greater yield, though the cost of cultivation would have been considerably more.

But on soils exactly adapted to carrots, a yield can be obtained so much greater than is afforded by potatoes, as to throw the balance decidedly in favor of the former.

Carrots may be sown from the 10th of April to the 1st of June, though on light and dry soils, we should prefer sowing them as early as the ground is found to have acquired a sufficient degree of heat to cause the seed to vegetate. Beets may be sown from the first to the 20th of May—ruta-baga from the 20th May to 10th June—and flat or common white turneps, from the 20th July to 10th August. The chief advantage of raising the latter for stock, consists in the lateness of the season at which it admits of being sown—frequently occupying land from which a crop of hay or rye may have been taken the same season. They are very useful for cattle and sheep the fore part of winter, though their real value is thought to be fifty per cent. less than potatoes.

Carrots, beets, and turneps are sown to best advantage with a machine. A good machine will do the work better than it can be done by hand, and with a great saving of labor. After the ground is well prepared, a man will sow or plant from an acre to two acres in a day—according to the distance between the rows. Carrots will bear thick planting. Mr. RISLEY, of Chataque county, a successful competitor for the premiums on this crop offered by the N. Y. State Ag. Society, makes his rows about ten inches apart. If, however, it is desired to use the horse-hoe or cultivator in managing the crop, a greater distance must be given,—say twenty to twenty-two inches. Where the use of implements drawn by a horse are resorted to, it is obvious that more space must be allowed between the rows than the carrots require; but this objection may be in a good degree counteracted by sowing two rows as near together as will just allow the working of a hoe between them, leaving the alternate spaces sufficiently wide to admit the harrow or cultivator. The plants should stand in the row at about the distance of three inches. The white Belgian carrot is most easily grown, but is thought to be less nutritive than the yellow varieties.

Beets and ruta-baga should be sown in rows, at the distance of two feet, and thinned to a foot apart in the row. After having been gone over with the hoe once or twice and carefully thinned, the cultivator will do the working, if properly used. In fact it is only neces-

sary at any time to use the hoe in working close to the row. It is not best to thin either beets or carrots till they get well into leaf, as they are liable to the attack of insects, particularly the turnep flea or "fly," and the various kinds of "cut worms." The best protection against the fly which we have ever tried, is a sprinkling of plaster, air-slacked lime or ashes, while the plants are wet with dew, so that the dust will adhere to them and form a crust.

CAPABILITIES OF GEORGIA.

.....

MR. TUCKER—The great improvements that have been made in our world, and are still making in Agriculture and all the mechanic arts, are calculated to cheer the heart of every friend to our race, and we wonder how any being can live at this time and not feel a deep interest in these great matters, and a desire to contribute something, if it is ever so little, to so good a cause. In Georgia we have made a very prodigal use of the many good things with which Providence has blessed us. This is wrong, morally wrong. We ought to turn everything to the best advantage, and if possible leave the country in a better condition than we found it. Another race of men will come after us, and they will want land and timber too, as well as we, and as just men, we ought to leave something for them. But we are by our improper conduct, doing posterity a great injury without benefitting ourselves, for our wasteful ways are no advantage to us, but the contrary. But notwithstanding all our wasteful ways, and prodigal doings, we can yet do well enough in Georgia, if we can wean ourselves from our bad habits.

A great portion of our land can be reclaimed by proper management, and a good many things can be profitably cultivated that hitherto have received little or no attention. We can make wheat and flour in Georgia good enough for any body, and the people are in a fair way to convince themselves that they can produce the article in great abundance, for from everything we can learn on the subject, there was as much wheat sowed last fall as has ever been sowed in any two years before, and there is little doubt but what sugar can be profitably cultivated in half the state, and the other half is blessed with water-power in abundance, and other great advantages.

Wool and silk can be produced in Georgia as cheap perhaps as they can anywhere. Rye does not do well here, but barley does extremely well, and if the crop is profitable anywhere it can be made so here. On suitable land barley grows so thick and fine that it looks as though there was no room for any more on the ground. The sweet potato too does extremely well here, and it is certainly one of the most valuable roots in the whole world, and yet it is not cultivated to that extent that we think it should be. Almost every planter in Georgia cultivates sweet potatoes, but there are but few that cultivate the article for stock, and this is what we think every planter in Georgia ought to do. Every body knows that sweet potatoes are good for hogs, cows, and sheep, and that the article can be produced in great quantities, and yet it is not done. It is thought that cows fed on sweet potatoes give better milk, and more of it, than those fed on any other food we have in this country, and some think that hogs will fatten as fast on potatoes as they will on corn, but whether this is correct or not, there is little doubt but hogs thrive better or faster on corn and potatoes, or on peas and potatoes, than they do on either corn or peas, or both corn or peas. In every pea field that is intended for hogs, there ought to be a potato-patch that the hogs may get both peas and potatoes at the same time, and if the people would adopt the plan of feeding hogs partly on peas or corn, and partly on potatoes, they would doubtless find the plan a good one. If potatoes are left in the ground they will keep good enough for hogs, in that condition, a long time, sometimes almost or quite through the winter, and by leaving them in the patch and turning the hogs in, we get clear of digging,

which is a considerable job. Perhaps the best plan is to turn both hogs and sheep into the potato-patch at the same time, that when the hogs root up more potatoes than they eat, the sheep can take care of them.

We possess many important advantages in Georgia, and if the spirit of improvement that is abroad in the world extends here, and the people abandon their old wasteful habits, Georgia can yet become one of the most desirable countries in the world. We have a sufficient variety of climate and soil to produce almost everything that is produced in the world; we, in fact, have so many advantages that we don't appreciate or improve any of them as we should do, but sometime we hope the people will wake up on the subject of improvement, and divide the honors and profits that are to be derived from these things.

A. E. ERNEST.

Bibb Co., Ga., 1846.

TURNING STOCK TO GRASS.

.....

UNLESS compelled by scarcity of winter food, we should not generally turn stock to pasture till the grass had started so as to afford what farmers call "a good bite." If animals only get a little grass, and that of a watery and innutritious nature, as the first growth generally is, it takes away the appetite for other food without giving much nourishment in its place. Besides, grasslands, while in a soft or unsettled state, are injured by being trodden or poached by stock. This is perhaps the greatest objection to turning out early, or before the soil gets firm; though sheep, from their comparative lightness, do much less injury than heavy stock.

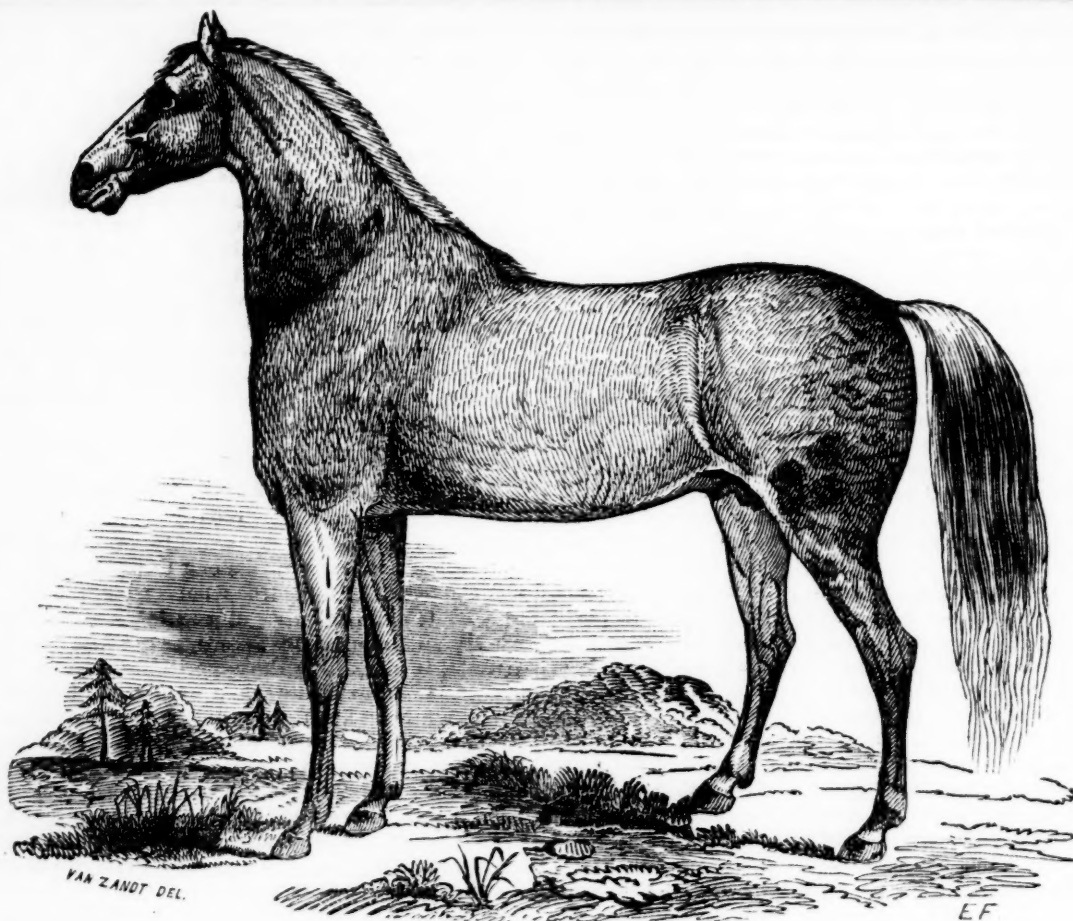
Clover and timothy are generally much injured by early feeding. Red-top and blue-grass are more hardy, and from their habits tend to unite the soil and make a firm sod. On this account, soils set in these grasses may be pastured, if dry, at almost any season, without much injury.

To check the too laxative tendency which young grass sometimes has, it is best to give stock a foddering of hay at night, for a while after they are turned out; and in case of storms, they should have the benefit of shelter.

Sheep may be pastured on rye for a short time, if it is pretty forward, without injury to the crop, and with very great advantage to the sheep, especially to nursing ewes. In case of a scarcity of other feed they may be turned on dry meadows. If not too heavily stocked, we do not think the yield of hay is much lessened by meadows being fed by sheep till the 15th or 20th of May. The crop is made later, but it is usually finer and thicker. Mr. M. Y. TILDEN, of New-Lebanon, N. Y., an extensive wool grower, is in the practice of pasturing his meadows with sheep both spring and fall; yet he finds his crops of hay rather increase than diminish. He certainly gets a good product. In 1843, he took from 132 acres, 285 tons of well-cured hay, and not more than ten acres, as he states, was manured at all, excepting from the sheep as they grazed over it. We have known several similar instances.

It is best not to turn working oxen to grass till they have done their "spring work." They will perform labor much better when fed on good, bright soft hay, with two or three quarts of meal from Indian corn, barley, or oats and peas, with a few potatoes, carrots, and other succulent vegetables than when fed on the young grass. It takes some time for the animal system to accommodate itself to the change from dry to green food, or from hay to grass, and the first growth of grass, besides being deficient in nutriment, is likely to weaken animals by its cathartic action.

DEEP CULTIVATION.—A correspondent of the London Gardener's Chronicle, speaking of the importance of deep cultivation, and in connexion a deep diffusion of manure, says, "I have found the roots of the Swedish turnep five feet below the surface on which its bulb was growing, and all around it to a distance of three or four feet, the fibres of the root to a lesser depth, had completely permeated the soil."



MR. MORSE'S HORSE "NORMAN."—(Fig. 43.)

THE original, from which the above cut was taken, is the horse called "NORMAN," or MORSE'S GREY, owned by Mr. CALVIN MORSE, of Lansingburgh. We had the pleasure, not long since, of seeing this horse in harness, and of witnessing something of his powers as a traveller; and we feel bound to say that our opinion of him is in all respects highly favorable. He is unquestionably a very valuable animal. As a roadster, his gait is good, and any one who will drive him, will soon be satisfied that he has all the speed desirable for any useful purpose. Though he is considered an "all day" horse, and will without urging trot ten miles an hour, he can readily accomplish a mile in less than three minutes. His constitution appears strong, and his faculty of endurance is undoubted. He is twelve years old, is 15½ hands high, well proportioned, and weighs eleven hundred pounds. His color is a dapple grey.

But as furnishing a better account of this horse and his progeny than we are personally able to prepare, we make the following extracts from a statement put into our hands, the correctness of which is certified by George Vail, Esq., Gen. A. T. Dunham, J. Van Schoonhoven, Jr., L. R. Sargent, A. Patten, and others of Troy, Watervleit, and Lansingburgh:

"Of his pedigree little is known; but as he has established a reputation of his own, little anxiety is felt in this respect. His sire was a nameless horse brought to Quebec from France, and finally owned by Mr. James McNitt, of Washington county, in this state, in whose hands he died. The value of the stock was therefore unknown till it was thoroughly tested.

"Norman's celebrity consists not in length of pedigree, but in the excellence of his stock. In fact, so far as a good horse for the road is concerned, Mr. Morse has reached a desideratum, for the progeny of his horse possess all the good qualities of any stock, without a single vice. They combine great trotting powers, good courage and excellent bottom. They have sufficient size, good carriage, and good proportions, united with great tractability and gentleness. He has stood in

Washington, and the adjoining counties, for the last nine years, but such has been the demand for horses of his get, that it is now almost impossible to purchase any of them of a proper age for business, at any price. They have commanded prices of from \$150 to \$600. A gentleman in Lansingburgh has realized over \$1,200 for three of them. Foals by this horse, from mares of good reputation, have been known to bring \$100 each, when dropped."

We would call attention to Mr. Morse's advertisement in this number. It will be seen that he offers good accommodations for mares sent from a distance.

BREEDS OF HORSES.

.....

In the *British American Cultivator*, we find a report of the discussion by the "Newmarket Agricultural Club," of the question—"What breed of horses is best adapted to the wants of the country?" We give the following abstract of the remarks made.

The first speaker on the subject thought "some of the entire horses which had been into this country [Canada] within the past few years" have been too heavy and others much too light for the general wants of the country. A horse possessing rather light bone with good action is preferable for ordinary purposes. It is the common opinion that the horses of this section of the country are not as good now as they were 15 or 20 years since.

The second speaker said it was not many years since the Home District was noted from one end of Canada to the other, for its valuable race of horses; and he thought that by the introduction of the small race of English blood-horses, the stock was considerably run down and reduced in value. It was an acknowledged fact that the present half-bred horses in the District cannot endure half of the service the old-fashioned race is capable of enduring. He thought a cross of the largest sized French or Lower Canada horse with the best

mares would produce a breed adapted to all useful purposes. The Lower Canada horses are great travellers, and can be kept in good condition with less cost than any other race known in the country.

The third speaker thought the bone of the blood-horse was stronger than that of any other race; but he concurred with other members of the club, that only the *largest* description of blood-horses should be encouraged in the country.

The fourth speaker thought the horses of the neighborhood had been injured by injudicious breeding. The best and largest sized Lower Canadian horses, crossed on the best mares, would produce a stock that would be hardy in the extreme, and for all useful purposes could not be excelled. He had travelled much through the country for the purpose of purchasing horses, and had come to this conclusion from observation.

The fifth speaker thought all that had been said in favor of the Lower Canadian French horses was strictly correct. He was certain that no breed of horses would perform long journeys and the various servitude that was required, so well as the thorough or even half-bred Canadians.

The sixth speaker agreed with the speakers that had preceded him, that the Lower Canadian horses, crossed on the large Pennsylvania mares, would produce a most valuable description of stock.

DESCRIBING FRUITS.

THE increasing importance of fruit culture, as a source of commerce and wealth, as well as of domestic comfort, and the great consequent increase of attention given to it in all parts of the country, render the description and recognition of varieties which so numerously abound, a matter very much to be desired. The names of good fruits are often applied to bad, and of celebrated, to obscure varieties. It is hoped therefore, that every effort to remove the confusion and ambiguity which has been so common in describing fruits, may be found useful.

We are often furnished with specimens of this obscurity and want of accuracy. An instance was lately observed on looking over the pages of McIntosh's "Orchard"—a book standing quite high among British works on Pomology. Eight different sorts of *Nonpareil* are described in this work; the first is Braddick's Nonpareil, which among other things is described as "quite the Nonpareil shape"—what that is, is not stated. The next is the Golden Nonpareil, which is "in form, that of the Nonpareil group;" the Scarlet Nonpareil is in "form similar to other Nonpareils;" the Old Nonpareil is "flattish," the Martin Nonpareil is "nearly conical," the Ross Nonpareil is "roundish," the Sweeney Nonpareil is "irregular," and the Pitmaston Nonpareil is "compressed at both ends like all the Nonpareils;" while the colored figure represents the Scarlet Nonpareil as roundish, inclining to ovate or conical, and not at all compressed at the blossom end, the stem being invisible. On looking into Cox's, who gives figures of nearly all his apples, for information to reconcile, if possible, these contradictions, two varieties of Nonpareil are found, one of which is represented flat, and the other long-conical.

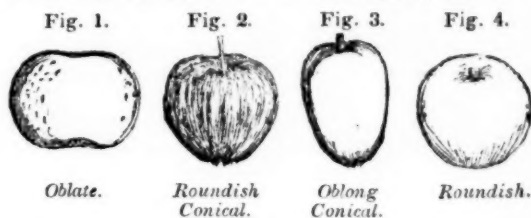
The comparison of one fruit with that of another by way of description, is not very satisfactory to a person of limited experience or observation, at the same time that it is very frequent in many works. The expressions, "Pearmain shaped," "Calville shaped," "form that of a Colmar," &c., though very intelligible to some, are to others about as perspicuous as Dr. Johnson's two famous definitions,—"wrong, not right,"—and "right, not wrong."

Loudon, Downing, and others, have given some figures illustrating the meaning of terms; and with the hope of contributing a little to uniformity and perspicuity among the many who furnish descriptions of new fruits, some additional examples are given.

An apple is *flat* or *oblate*, when the height or distance

from the stem to blossom, is much less than the (cross) diameter, as in the Rambo, fig. 1.

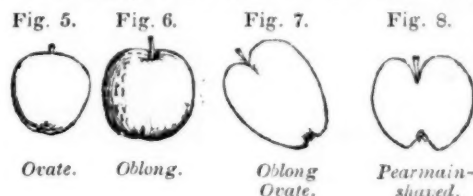
It is *round* or *roundish*, when the height and diameter are nearly equal, as in the Wine apple, fig. 4.



It is *oblong*, when the height is more than the diameter, and the sides are somewhat parallel, as in the Summer Pearmain, fig. 6.

It is *ovate* or *egg-shaped* when the height is greater than the diameter, and the form rounded and narrowed towards the blossom end, as in Bullock's Pippin, fig. 5.

It is *conical*, when it tapers to the blossom end, without the sides being rounded, as the Cumberland Spice.

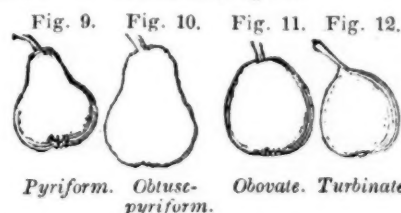


Different combinations of these simple terms apply to various other shapes; as *oblong-conical*, as in the Black Gilliflower, fig. 3; *oblong-ovate*, as in the Porter, fig. 7; *roundish-conical*, as in the Summer Queen, fig. 2; *roundish-ovate*, as in the Esopus Spitzenburgh and Baldwin; *roundish-oblong*, as in the Pennock, and Newtown Pippin; *roundish-oblate*, as in the Swaar and Rhode-Island Greening, &c. As most varieties approach the round form, and as a consequence are not so readily distinguished, as when of more striking forms, a closer observation and a greater number of examinations are needed to detect slight approaches to other forms.

The same terms may apply to pears and other fruits, but pears require in part a new set of terms, as,

Pyriform, (strictly pear-shaped,) with a considerable neck, as in the Andrews, fig. 9.

Obtuse-pyriform, the same in shape but more blunt or rounded, as in the Bartlett, fig. 10.



Obovate or *inverted ovate*, as in the Virgalieu, fig. 11.

Turbinate, (or top-shaped, a term rather ambiguous among modern toy-dealers,) rounded, and slightly tapering to the stem, as in the Bloodgood, fig. 12.

Roundish, as in Bleeker's Meadow and Summer Rose.

Various combinations of these forms exist, as *obovate-pyriform*, in the Washington and Urbaniste; *turbinate-pyriform*, as in the Capiamont and Madeleine; *roundish-pyriform*, as in the Julienne and Summer Frankreal, &c.

The form of pears is sometimes described by comparison with others, as *Bergamot-shaped* or *roundish*, rather flattened and inclining slightly to ovate; *Colmar-shaped*, or *obtuse pyriform*, &c.

Apples are often described by the same mode of comparison, as *Calville-shaped*, conspicuously ribbed, and more or less irregular; *Pearmain-shaped*, roundish, slightly oblong-ovate, and something like a truncated cone, as in the Herefordshire Pearmain, fig. 8. The term *pippin* is applied to all kinds of apples, of every variation in color, flavor, form, and keeping qualities, and appears to possess no definite meaning.

J. J. T.

AN AGRICULTURAL SCHOOL.

.....

MR. TUCKER—I was travelling through one of the best agricultural districts in the state of New-York in the month of July, when the fields were waving with the ripening grain, and all nature decked in smiling green, promised to crown the labors of the husbandman, with an abundant harvest.

At the public house where I stopped for the night, the conversation turned upon the subject of agriculture. I remarked to the landlord, who appeared to be a very intelligent gentleman, that the farms I had passed during the afternoon, appeared to be under a good state of cultivation, and that the general appearance, in relation to improvements, buildings, stock, &c., &c., indicated as much thriftiness and advancement, and I thought even more, than any section of the state I had previously visited.

He replied that this was the general remark of strangers, and that it was supposed to be in advance of any other section of the state; that a very great improvement had been effected within a few years, and it was believed on all hands, that it had been caused by the example of the agricultural school in the neighborhood.

It being the first intimation I had received, that an institution of that kind had been organized in that section, or even in the state, I was induced to make some inquiry, and received a long and interesting account of its management, so much so that I resolved to visit it the next day.

Accordingly in the morning, I drove a short distance and arrived at the agricultural school, and introduced myself to the principal, and spent most of the day about the establishment.

I found it to be a private enterprise. It had been organized about five years; the whole establishment being owned by its principal, who was a well educated, scientific, and practical farmer.

The farm contained two hundred acres, all of which, except one large lot containing 60 acres, was farmed in the very best manner by the proprietor; the dwelling-house was large, and the arrangements admirable, being sufficient to accommodate the family of the proprietor, and thirty students.

The building occupied as a school room, was neat and convenient, and well adapted to the purposes for which it was constructed, containing, in addition to study and lecture rooms, a spacious laboratory, and all the necessary chemical and philosophical apparatus for analyzing all the various soils.

In another room, I observed a large and well selected library, containing, in addition to all the best works on agriculture, the standard works on literature and general science; also most of the agricultural periodicals published in this country and Europe; together with a complete set of the back vols. of the *Cultivator* and *Genesee Farmer*, and a well arranged, and somewhat extensive geological and mineralogical cabinet.

Near the school room, was a building for storing farming implements and tools, all of which were clean and in good order, each pupil being required to keep the tools used by him in their proper places.

A field of sixty acres lay adjoining the school-house, which was divided by three alleys running through the whole, each alley being wide enough to drive a team along; the whole being then subdivided by narrow walks crossing the alleys at right angles, into plats, containing from a quarter to a half acre each.

Each student is permitted to till what land he chooses, (not to exceed three acres) of this field, and pays a stipulated rent for the same, and is taxed a certain amount per week for board and tuition, and is charged by the hour for a team, whenever it is found necessary to use one; and has the privilege of paying three-fourths of his board and tuition, and all his rent and team hire, in grain, vegetables, &c., &c., raised on his rented land, at a stated price.

Two professors, paid by the principal, have charge of the indoor studies, consisting of all the branches

usually taught in academies, and all that appertains to agriculture; and the proprietor, as Professor of Agriculture, directs the out-door operations.

A certain number of hours each day, are spent in the school-room, and an allotted time in the field, with the principal, studying practical agriculture; the balance of the day is spent in study, work, or such amusements as are deemed proper by the principal.

The proprietor occupied enough of the ground platted, to raise a sample of all kinds of grain, roots, and vegetables, for the purpose of instructing the students as to the manner and time of preparing the ground for planting and sowing each, and the method of tilling and managing while growing, harvesting, &c.

While cultivating the sample plat, all the students work together; for this labor, they are not paid, but it requires only a trifle of the whole time.

In this plat may be seen a small piece of winter wheat, spring wheat, rye, oats, barley, buckwheat, flax, peas, beans, corn, red-clover for hay and seed; clover to plow under for wheat, timothy grass, for hay and for seed; potatoes, turneps, and a little of everything.

For instance, when the proper time arrived to prepare the ground for onions, all assisted in preparing a small piece for the proprietor; there all learn how and when to prepare for their own crop; the same in planting, weeding, gathering, &c.

A nursery, consisting of the different kinds of fruit trees, is attached to the establishment; each pupil is instructed in the manner of raising every variety of fruit trees, from the seed to a bearing tree; including grafting, budding, pruning, and the best management of trees while in a bearing state, as well as the preventive and cure of all the diseases to which they are liable.

A well arranged flower garden, managed by the pupils, is included in the arrangement, and all are here instructed in ornamental gardening.

The farm is stocked with a specimen of the different breeds—including horses, cattle, sheep, swine, &c.; thus enabling the pupil to judge of the comparative merits of each.

Instructions for raising, training and feeding horses are given; also for raising, keeping, fattening, butchering and packing cattle, sheep, and swine; and the best method of preparing wool for market.

Convenient barns and out-buildings, for all the different kinds of stock are well arranged and kept in good order, including most admirable fixtures for poultry and bees.

Among the various articles of interest in the warehouse, I noticed several beautiful samples of maple, beet, and corn-stalk sugar, manufactured by the pupils.

It was a pleasing and noble sight, to see thirty young men leave the school-room, all at once, and step into the tool-house, each changing their shoes for a pair of thick boots, and their coats for a frock, and taking a hoe in their right hand, form in double file, in front of the building; the proprietor who had stood waiting, stepped in front, and at the word, all marched in regular order to their out-door labor, or lecture; every scholar exhibiting a healthy and robust appearance.

I was informed that some of the students were sons of the most wealthy men in the state; and that others had entered the institution without any means; but had rented and tilled the more land, and had raised produce sufficient to pay the whole of their expenses, including clothing.

All the produce, not consumed on the farm, was marketed in a neighboring city.

Each pupil kept a regular entry of all the business transactions between himself and the principal, and settled every six months, which answered the double purpose of adjusting the pecuniary transactions between the pupils and principal, and also to teach them correct business habits.

This institution appeared to me to be better calculated to impart a thorough and useful education, and at the same time a theoretical and *practical knowledge of agriculture*, than any establishment I had ever visited.

It afforded me great pleasure to learn that this school had not only afforded several indigent young men the means of qualifying themselves for future usefulness, but had thus far been a source of revenue to its philanthropic proprietor, who by a judicious use of his means had thus been instrumental in doing so much good to his fellow men. I could readily understand how the example of this institution led to the agricultural improvement of the surrounding country, as it had daily visitors not only from our own but the neighboring states, and fondly hope that this example may be followed by others.

Here the village bell broke my slumbers, and I regret to add, that my awakened senses convinced me that the above is but a DREAM. E. C. F.

Sixth Senate District, March, 1846.

DIGGING WELLS IN SLATE.

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A considerable portion of Western New-York is occupied by the slate of the Hamilton Group, most of which is covered with only a few feet of earth. This earth is the reservoir or sponge for holding the water, which falls in rain, and which, soaking downwards, forms springs and supplies wells. The upper surface of the slate rock being nearly even, the underground springs usually flow upon its surface. Hence, where the earth is shallow above it, and the water is thus carried to the surface, it oozes out in open springs. But from the thinness of this stratum of earth, these streams are often very small, and not unfrequently fail in drouth. As springs are rarely found in the body of the rock, considerable inconvenience is consequently experienced in dry summers from a deficiency of water. One of the best contrivances to obviate this difficulty we have seen, was lately adopted in practice by David Thomas, of Cayuga county, and is represented in section in the annexed figure. The well was made as follows:—It was dug after the common mode about seven feet in diameter, through ten feet of earth to the rock; and of the same size about as much deeper through the slate, until the latter became so hard that the pick would no longer penetrate. The water flows in abundantly during the wet part of the year, but when the season is dry the supply from springs nearly fails. A reservoir is however formed, by the water-tight rock, ten feet deep and seven feet in diameter. To obviate the necessity of nearly filling this reservoir with stones, as in the usual

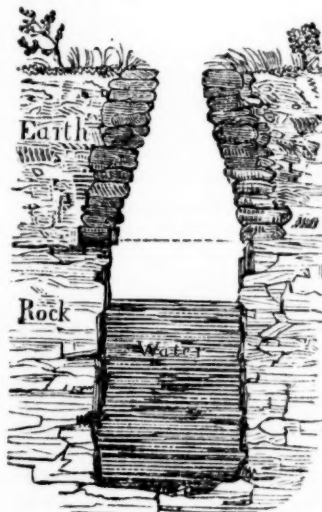


Fig. 47.

mode, a close scaffold or platform is laid across the well, resting on the upper surface of the rock, and covering entirely the space across the well. This is shown by the dotted lines. On this the workman stands, and commences stoning the well by laying the foundation on the rim of rock, which is for this purpose laid bare of the earth about one foot around. As he rises in building the wall, he gradually contracts its diameter, until it is drawn into the usual size, or to about two and a quarter feet. Every layer of stones forming a circular arch, it is perfectly impossible for the wall to fall, if the stones are of tolerably good shape for building; in the present case they were selected from those scattered over the adjacent fields. No mortar of course is used. When the stoning is finished, the scaffold is removed, and the well is done.

The chief advantages of this contrivance, are, it obviates stoning the lower part; it furnishes a large reservoir, so capacious that when filled in spring and summer, it rarely becomes dry by ordinary family use, in

autumn; and the serious difficulty so often experienced with new wells for many months, by offensive matter dissolved from the stones, is entirely and at once removed. The mouth being small, it possesses all the advantages of coolness in summer resulting from narrow wells.

This rock forms large portions of Erie, Genesee, Livingston, Ontario, Seneca, Cayuga, Onondaga, Madison, Otsego, and other counties, and a knowledge of the preceding mode of digging and stoning, may be of very considerable advantage to many persons.

CONDENSED CORRESPONDENCE.

.....

VALUE OF POUURETTE.

J. SHERMAN, of Milton, Ulster Co., N. Y., states that he bought, in the spring of 1845, three barrels of D. K. Minor's pourette, one barrel of which he used on corn in such a way as to test its profitableness. He put it on six rows of corn running through the field. At harvest, the yield of these six rows was carefully compared with the same number of rows alongside which had received no pourette. The result was, that the six rows on which pourette was used, gave *two bushels* of ears more than the other six rows—"making," he says, "the extra bushel of shelled corn, cost *two dollars*." The experiment, he says, reminded him of the man "who greased one of his shoes and left the other ungreated. The ungreated one gave out in the forenoon and the other in the afternoon."

.....

USE OF GUANO.

A correspondent with the signature of "R.," who dates at Poughkeepsie, speaking of the experiments with guano and other substances, as given by Mr. Bradhurst, in our January number, says he was pleased with the *exactness* with which the experiments seem to have been conducted. Accuracy, he properly remarks, is very desirable, but too many, he thinks, "content themselves by stating the fact that they have used certain manures on different pieces of land without measuring either manure or land, or stating the mode or time of applying it, &c. Such communications do more harm than good." * * * "If you could induce all correspondents giving accounts of experiments to state proportions, weights, measures, mode and time of applying manures, cost, &c., you would greatly add to the usefulness of your paper."

In relation to the application of guano, he thinks the best way is to use it on land in "fair order," about 200 lbs. to the acre. As the guano "contains much coarse matter, bones of birds, shells, lumps, &c., he thinks it should be sifted, and then mixed with fine sifted coal ashes, or soil, at the rate of one part guano to three parts ashes or soil. "Let it stand in a covered barrel in a confined place from the air, for a week or ten days—then spread and plow it in immediately; or if used as a top-dressing it should be spread either during a rain, or with a prospect of rain soon, that it may be fixed in the soil to prevent the escape of ammonia."

"Lime should never be used with guano as a top-dressing, it causing the ammonia to escape; but when plowed in it is different, the ammonia being retained by the soil, as the guano decomposes."

"Persons purchasing guano should ascertain whether it is *imported* or *manufactured*, as it would make a material difference in the result of the experiment."

.....

EXPERIMENTS WITH GUANO.

A correspondent, writing in reference to the experiments of Mr. Bradhurst, given in our January number, says—"There is evidently some mistake made in the quantity of pourette used, or it was next to being worthless. The instructions given for the use of pourette, are one gill to a hill of corn, and two gills to a hill of potatoes, and anything beyond that quantity endangers the crop. According to Mr. B.'s statement, he put in pourette scattered along in the drill at the rate of \$20 worth per acre, that is, at the rate of 54 barrels,

containing 216 bushels, per acre. The poudrette, if good for anything, would have burned up and destroyed any vegetation that grows in the earth; and the only reason that the potatoes grew, if such quantity was put in the one-one hundred and twentieth part of an acre, was, that what he called poudrette was literally worthless. The potatoes must have been entirely enveloped in the poudrette, and every man, who has used good poudrette will say, that the potatoes never could have grown there.

"Guano and poudrette are like fire, good servants, but hard masters, and if not properly regulated will do more hurt than good. Poudrette has been used for more than 150 years, and by long experiments, its value in use has been tested and regulated. Guano, on the contrary, has not been sufficiently tested according to the relative value of the three kinds imported, and hence our farmers have burned up their crops to a very large extent by its use. I hope Mr. B. will re-examine his statement, and advise us what poudrette he used."

DIGGING PEAT OR MUCK IN WINTER.

H. GOODHUE, West-Westminster, Vt., suggests, that as many peat bogs are inaccessible in summer, on account of their soft and miry nature, the winter season would be preferable for digging out the muck. The muck does not freeze so hard but that it may be easily cut intounks, and by using a sled, more may be carried away in a day than could be done with a cart. Besides, farmers in general have more leisure in winter to attend to procuring materials for manure, &c.

RURAL ARCHITECTURE.

A correspondent, "R." of Poughkeepsie, writes—"I like the plan of Mr. Hyatt's cottage much, and hope to see that style of building come into more general use in this part of the country. It is cheap, neat, tasteful, and well adapted to most situations in the country where an elevated piece of ground with a few trees can be obtained; but for many situations it might be improved by enlarging the body of the building, and dispensing with the rear wing."

RIBBON HOUSES.

A correspondent who appears to understand the business, furnishes the following account of constructing this kind of houses:

"The ribbon may be sawed from almost any kind of sound hemlock or other kinds of boards; knots or any thing of the kind making no difference. A fourth of an inch should be the uniform thickness of the ribbons; if it is more, the plastering will not adhere well. One-half of the stuff that is designed for the walls should be sawed four inches wide; the other half four and one-half inches. That for partitions, uniformly 3 inches wide.

"When the sills are laid, commence by nailing down a course of four inch stuff; next course should be of 4½ inch stuff, the outer edge being placed plumb with the one beneath it; and so proceed first with a four inch ribbon, then with a 4½ inch one until the walls are carried to the necessary height of the window stool; then the windows and frames may be put in, after which proceed as before, always remembering to break joints as in brick work. The partitions should go up as fast as the walls; the edge of the 2d course must jut over beyond the first, one-half inch; 3d course plumb over the first, 4th plumb over the 2d, and so on; this is done that the plastering may stick well without lathing. Every alternate course in the partition should extend through the wall and be well nailed.

"When the walls and partitions are carried to the required height, the beams may be put on without plates. The rafters should rest on the ends of the beams. All the ribbons should be nailed with eight-penny nails. It should be clapboarded the same as framed houses. No lathing is necessary if the materials are sawed as directed. No braces or studs are required.

"Many have built in this way in these parts, and affirm that it is a much better way and more economical than the old method. To build a one story house 30

by 36, it requires not far from 10,000 square feet, or about 30,000 feet in length of ribbons."

AGRICULTURE AMONG THE CHEROKEES.

WE have several times alluded to the favorable indications of improvement in agriculture and the domestic arts, exhibited by the Cherokees. We have had fears that the late disturbances among that people might tend to repress the spirit which has been so favorably manifested. A letter lately received from Mr. STEPHEN FOREMAN, (enclosing fifteen subscribers to the Cultivator,) informs us that, though the excitement has had to some extent, an unfavorable effect, yet he has reason to hope that the "unpleasant state of things will soon pass away." Mr. F. says—"During last summer, quite an interest was taken in the organization of an Agricultural Society, called the Agricultural Society of the Cherokee Nation; the account of which I presume you have seen in the *Advocate*. Between seventy-five and a hundred dollars were subscribed and partly paid over, to constitute a fund to be expended in carrying out the objects of the society. This is but a small beginning, but we hope for better days."

FARMERS IN MISSISSIPPI.

THEODORE GILLESPIE, of Springfield, La., gives us some notes of a trip through a portion of Mississippi. He says, that in a journey of three hundred miles in that state, he found three farmers who had adopted the motto, "*Order is Heaven's first law.*" At these places, he observes, "all the houses and cows looked fat and comfortable. The negro-houses were in regular rows; the barns comfortable; stables dry; corn-cribs full; gins with good sheds and scaffolds; fences neat and well staked; fat hogs enough for the year's meat; negroes well clad and comfortable; and to conclude, a good dwelling house. And here the wells, I must remark, were about the kitchen. At these places one could discover a regular course of business—everything being attended to in its place—among others was the little homespun manufactory, which I very much admired. The average of cotton made on these plantations was about six bales to the hand."

THE PAST WINTER IN GEORGIA.

A. POPE, Washington, Georgia, writes under date of Feb. 18th:—"The present has been such a severe winter with us at the south, and food is so scarce, that many of our largest planters have already lost a good many of their cattle and hogs. Should the winter be a protracted one, there will necessarily be much distress among the poorer classes of our population, who have neither the money nor credit to purchase with. Corn-meal is selling for one dollar per bushel, with an upward tendency. We have had so much bad weather that we are very much behind with our plowing. Wheat looks very badly. Oats sowed last fall have been killed. Rye is very unpromising, and taken altogether, our farmers have a pretty gloomy prospect before them."

GAPES IN CHICKENS.

A correspondent informs us that his chickens were last spring much affected with gapes, by which many died. He finally tried the plan of putting a feather down the wind-pipe, as recommended by E. F. Morton, (*Cultivator* for 1844, page 305,) for the purpose of drawing out the worms which it is thought occasion the disease. After this plan was resorted to, no more chickens died.

USE OF CARPENTER'S TOOLS BY FARMERS.

"J. P." says—"Every farmer should be a carpenter." We have repeatedly recommended in the *Cultivator*, that farmers in general should be prepared to execute mechanical work of various kinds. J. P. suggests various advantages resulting from this mode, for which we have not room in detail. He very properly remarks, that the farmer who is well provided with carpenter's tools, and is accustomed to their use, will be more likely to keep his buildings and fences in order, than one

who is not provided with such tools. In the one case, he says—"the rotten rail fence will gradually be replaced by a neat board fence. His horses, cattle, and sheep, will be protected from the storm by neat and economical buildings; his farming tools will all have a proper place when not in use; even the old wagon will have a place under a protecting roof."

MACHINES.

C. EASTON, of North East, Pa., suggests that a machine for planting wheat in rows would be very useful—the drill mode of cultivating wheat being, he thinks, preferable to the broad-cast. We have seen several machines used for this purpose, some of which work very well. In our last number, (page 127,) mention is made of one used by Mr. Noble of Ohio, which sows six rows at once, and which we have no doubt is a good machine.

Mr. Easton also suggests that "every farmer should have a machine with which he could thresh his own wheat, cut his straw, and with the same power and a burr saw, cut his wood, when he had nothing else to do." He also thinks, "if a farmer would cut his wheat straw, return it to the ground, and plow it under, he could raise wheat year after year, by adding a little more, and have his ground grow better."

FLAX AND BARLEY SOWN TOGETHER.

F. L. E. writes—"In a conversation with a gentleman from Montgomery county yesterday, he informed me that a number of farmers in the town of Florida, had made the experiment in sowing flax-seed and barley together, and in every instance succeeded admirably—that he sowed himself (on a certain piece of land, not specifying the amount,) ten bushels of flax-seed and eight bushels of barley, which produced one hundred and thirteen bushels of seed and eighty bushels of barley. He also informed me that his cattle eat the flax and barley with a good relish."

FRUITS OF INDUSTRY.

A correspondent with the signature of "MOUNTAINEER," whose residence is at Washington, D. C., details the course he has pursued in bringing into cultivation twenty acres of sterile land which he has purchased in that vicinity. His improvements have all been made by his own hands; and as he is in the employ of the government, and is obliged to devote ten hours in each day to his official duties, the work has been wholly performed, as he states, "between the hours of five and seven, morning and evening." Yet by constant application he has managed to make a fine garden, well set with fruit trees, grape-vines, and shrubbery, and is almost daily extending his improvements. In view of what he has accomplished he remarks—"It is surprising how much one may do by diligently improving every moment. To make the most of time we must systematize it, and never cease to remember that a minute idly spent is money dropped, which, grasp after it eagerly as we may, we never can pick up again."

SETTING POSTS.

Mr. WM. ANSLEY, of Potter, Yates county, N. Y., gives us the mode he practices in setting posts. After the hole is dug and the post set in, he puts in just earth enough to stay the bottom, and no more, filling the hole with small stones, pounded down. He claims the following advantages of this mode: First, that the fence, whether of boards or rails, is less likely to be affected by winds and frost; second, greater durability of the posts than when they are set in earth.

YIELD OF BUTTER.

J. P. FAIRBANKS Esq., informs us that at a late meeting of the Caledonia (Vt.) Ag. Society, FRANCIS E. FULLER, President of that society, stated that during the past year, he had made from ten cows 2118 lbs. of butter, (211½ to each cow.) Besides the butter, he made

100 lbs. of cheese, and raised five calves. One of the cows had been farrowed for two years. It is added that the butter brought the highest market price for the table. If any body has beat this with the same number of cows, constituting, as in this case, the whole dairy, we should like to hear from them.

USEFULNESS OF TOADS.

GEO. HUSSEY, Terrahaute, Ia., in reference to an article under the above head, says—"Not only the toad, but the whole family of lizards are useful in our gardens, and more so in our orchards, as they climb the trees after their prey, which are insects of all kinds, of which they devour great numbers; they are so quick and shy that it is not easy to observe their manner of feeding, but while they lie perfectly quiet in appearance, they are busily filling their stomachs with insects that we can scarcely discern."

BUCKWHEAT WITHOUT GRIT.

B. M., of Grand Isle, Vt., manages buckwheat as follows:—Cuts it with a cradle; a hand follows the cradle with the rake, gathering into bunches, setting them up on the butts, and twisting the tops together with the hands. If it is wet at the time it is cut, he thinks it all the better, as it will not shell as much, and the wind will soon dry the bunches. When carried to be ground, it is passed through a smut mill.

THE RIGHT SPIRIT.

A young man in Vermont who has got us several subscribers, writes:—"Though I am a boy of only 18, the interest I take in agricultural improvement is great. I should be glad to be one of the best farmers in the United States, and I mean to be if Providence smiles on my efforts and grants me the blessings of health and strength, although I am without capital, and am situated in the midst of the Green mountains."

J. W. PADDOCK, of Wyoming, N. Y., writes—"I have taken your paper for three years, and I would not do without for three times its cost. In 1844, I raised 229 bushels of ears of corn on an acre of land, and I do not think I should have done it, if I had not taken the Cultivator."

CULTURE OF THE ENGLISH WALNUT.

Mr. WM. JENISON, of Cambridge, Mass., thinks the culture of the English Walnut would be a lucrative business for the farmers of Pennsylvania, Maryland, and Virginia. He states that he has known a single tree to produce 24 bushels in a season.

PEAS AND BEANS.

From the prices which these articles usually bring in Boston, I should think their cultivation might be attended with profit. Dried beans bring six to eight cents per quart, whole peas eight to ten cents, and split peas twelve and a half cents. [We presume these must be retail prices.—ED.] The Russian green peas, so called, bring fifty cents per pound, or \$25 per bushel. These peas are brought here in a fresh state. Have any attempts been made to produce this article in the United States? (Extract from a letter from Wm. Jenison, to the Cult.)

ALLOWING MALE ANIMALS TO RUN AT LARGE.

Great inconvenience, as well as positive injury is often experienced by bulls, rams, &c., being permitted to run at large on the highways, or from the want of being properly secured by their owners. In some states we believe special provision has been made by statute, in relation to the matter, and we think protection against the practice should in all cases be provided.

Our attention has just been called to this subject by a letter from a correspondent, giving an account of the damage which had been done to a valuable flock of Merino sheep by a "coarse native or mongrel buck," which in August last got into the pasture, and before he was discovered, had, as the sequel proves, done much

injury. More than thirty lambs of his get have already made their appearance, and it is stated there is a prospect of more. They were from breeding ewes of the best quality, which would have brought, had they been put to the buck which the owner intended, the most valuable stock for breeding; but as it is, the lambs are of no value in this respect.

RECEIPT FOR DYSPEPSIA.

C. C., of Union Vale, sends us the following receipt, the efficacy of which he vouches for:—"Make one quart of wormwood tea, and add to it one pint of best St. Croix rum, and brown sugar to the taste. It should be taken two or three times a day, from a fourth to half a gill at a time."

R. JOHNSON, of East-Groveland, N. Y., states that he grafts or buds roses in the spring as soon as the bark will peel. This he thinks has the advantage over summer budding, as there is more sap in circulation, and the bud is less liable to dry.

JOHN S. YEOMANS, of Columbia, Ct., informs us that GEORGE WILLIAMS of that town killed a hog last fall eighteen months old, that weighed 660 pounds. We are not informed of what breed this hog was, but it is intimated that he was *not* of the "land-shark" race.

ANOTHER EGG-LAYING STORY.

HAVING seen frequent articles in your paper where the Poland Top-Knot fowls were highly recommended as layers, I was induced in the spring of 1844 to purchase some eight or ten of them in order to test the differences, if any, between them and the common breed. From observation I soon became satisfied that they were rightly called "everlasting layers," from the fact that while the latter were continually annoying me with a desire to sit, the former showed no signs of it, but continued laying during the whole season. I raised a number of chickens during the summer, and in the fall found my number of Top-Knots had increased to 30, including two cocks. The balance of my poultry I disposed of, and more out of curiosity than any thing else, I concluded to keep an exact account of eggs received for one year, from Jan. 1, 1845. My number averaged but twenty-six, five of them having died during the year. My receipts were as follows:

| | | | |
|---------------|-----|--------------|-----|
| January,..... | 135 | July,..... | 361 |
| February,.... | 142 | August,..... | 311 |
| March,..... | 418 | September,.. | 284 |
| April,..... | 549 | October,.... | 104 |
| May,..... | 566 | November,.. | 51 |
| June,..... | 534 | December,.. | 32 |

Making 3,487 eggs.

Reckoning them at one shilling per dozen, which price they command three months in a year in our market, they would amount to the sum of,..... \$36.32
Deduct 13 bushels each of corn and barley, at
40 cts.,..... 10.40

Leaving a balance of,..... \$25.92

My yard occupies about one square rod of ground, a part of which is enclosed with rough boards to afford them shelter in stormy weather, and containing their nests and roosts, with an abundant supply of lime, sand, gravel, food and drink, which is always before them. They are not allowed to run out during any part of the season, and their desire for animal food is satisfied with now and then a sheep's pluck, and a supply of sour milk, of which they are extremely fond.

As regards the preservation of eggs perfectly fresh, and with very little trouble, for six or eight months during the year, or from March to December, I would recommend the following, having thoroughly proved it the past season:—For every two galls. water add three pints salt, one quart newly slacked lime, and a table

spoonful of cream of tartar. Let the keg stand in a cool part of the cellar, putting in your eggs from time to time, and brine sufficient to cover them. If they are fresh when put in, they will come out so after any reasonable length of time, as fresh and handsome as new laid eggs. Yours, &c., JOSEPH ANNIN.

Le Roy, Genesee Co., N. Y.

HEMP AND FLAX DRESSING MACHINE.

MR. TUCKER—In the last number of the Cultivator you ask information respecting a "machine for dressing and breaking hemp and flax, said to have been presented at the exhibition of the American Institute last fall, by Mr. Billings, of New-Hampshire."

I presume you refer to the hemp and flax breaking and dressing machines, invented by Messrs. G. W. Billings and John Harrison, of Missouri, as they were exhibited at the last Fair of the American Institute, by Mr. Billings, and received the flattering award of a gold medal. Having been employed by Messrs. B. & H. to prepare their drawings and papers, and to transact their business at the Patent Office, as their agent and attorney, I take pleasure in giving you the information you desire. Messrs. Billings and Harrison secured three patents—one for a method or process of water-rotting hemp or flax, which they perfectly accomplish in from three to four days, without injury to the health of the workmen employed in handling it, or to the neighborhood where the operation is carried on.

Their second patent is for a machine for breaking and scutching hemp and flax, which operates as follows:—The hemp or flax is placed upon a revolving endless apron, which conducts it between a pair of pressure rollers, (the pressure being very great;) from these it passes between a series of fluted rollers, and thence it emerges on to a series of rotating blades or knives, the ends of which are secured in a radial position in circular heads. Over the rotating knives, and parallel with the same, are arranged three vibrating knives, so arranged and combined, that they strike in succession one after the other, between each of the rotating knives; thereby giving the hemp or flax a thorough scutching while passing from the fluted rollers, by the double action of the rotary and reciprocating movement of scutching blades.

Messrs. Billings & Harrison's third patent is for a revolving hackle. It is constructed and operates as follows:—The hackle teeth are arranged upon a cylinder in continuous rows, commencing at the centre and diverging spirally to the right and left around the same to the ends of the cylinder. In front of the revolving hackle, an elastic rest is placed at a suitable distance; the hemp or flax to be operated upon by the hackle is placed between the centre of the rest and the toothed cylinder; the peculiar arrangement of the hackle teeth causes them to open and spread the substance acted upon gradually to the entire length of the rest, thereby insuring a thorough and equal action upon every part.

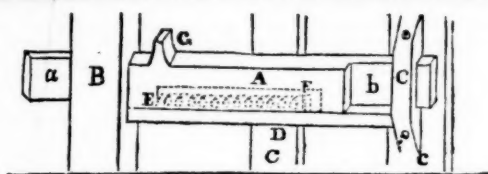
By the aid of Messrs. B. & H.'s inventions, hemp or flax may be water-rotted, broken, dressed, and baled, in merchantable order, ready for market, in the space of a week from the time of its being taken from the field. Respectfully yours, Z. C. ROBBINS,

Mechanical Eng'r and Agt. for procuring Patents.
Washington, D. C., April 14, 1846.

"FRUIT FOR COOKING."

IF W. R. Prince will examine the article on "Comstock's Garden Apple," and judge a little less hastily and superficially, he will see that I have not "fallen into a very great error." I never denied that some fruits not fit for eating, were not good when cooked, *provided*, (and here is his great mistake,) *plenty of sugar and spices are added*. Many kinds of good table fruit need no sugar and spices for flavoring them. Let him read my article over again and he will see what I mean.

The writer who described
Comstock's Garden Apple.



GATE LATCH.—(Fig. 78.)

I send you a description of a cheap and efficient gate latch. There may be better; but for the cost or labor of making, I know of none I consider equal to it. Any one who can use tools can make it. It acts so quickly, that when the gate is thrown shut it rarely fails to catch.

A, the latch, 10 or 12 inches long, and $1\frac{1}{2}$ square, with a shoulder at each end, made by reducing the thickness to one inch at a, and $\frac{3}{4}$ of an inch at b. Into the under side of the latch, a mortice is made six inches long, and $\frac{3}{4}$ of an inch wide, and of the same depth, to receive a spiral wire spring. The mortice and spring are shown by dotted lines, being hid entirely from view. The spring is made by wrapping a cold wire round a stick half an inch in diameter. B is the head-piece of the gate, with a hole morticed for the latch; c, c, palings; C, collar piece to hold the latch. D, cross-piece under and in contact with the latch, to keep the spring to its place; and into which is inserted the peg F, which holds one end of the spring, and which causes the latch to fly back to its original position after being drawn back by the thumb-piece, G.

Knoxville, Tennessee.

D. A. D.

INQUIRIES.

HOT AIR FURNACES.—E. H. O. (Petersburg, Va.) Between this and autumn, we hope to be able to give an article which shall embrace the particulars you wish.

CULTURE OF THE CRANBERRY.—We will give an article on this subject shortly.

SUCKERS ON CORN.—C. B. (Redford, Mich.) We have made some experiments to ascertain whether there is any advantage in cutting suckers. We have cut the suckers from alternate rows, and compared the product with the uncut rows at harvesting, but have never been able to see any advantage from cutting. But something may depend on the kind of corn—some kinds giving ears on the suckers, and others not,—and something also, may depend on the thickness at which the corn is planted—if too thick, thinning, by taking out the suckers, might be an advantage.

BLACK SEA WHEAT.—“A SUBSCRIBER,” (Stokes, N. Y.) This is a red, bearded wheat—the kernel rather round. But to give a description by which this may invariably be known from all other kinds, would be impracticable.

THE POPPY.—J. C. A. (Brutus, N. Y.) We are unable to give much information on the culture of the poppy, or the process of extracting opium therefrom. We doubt whether it could be produced to profit in this part of the country, as the heat of tropical climates is said to be required to give strength and potency to the juice. The kind called the white poppy, (*P. somniferum*), is we believe preferred for its narcotic qualities, but we cannot say where the seed can be procured.

SHELL MARL.—A. H. H. (Westmoreland, N. Y.) The marl you speak of may be spread on grass-land in the fall. When from such situations as you describe, it seems to be an advantage to expose it awhile to the air before using—after which it forms a good top dressing for most crops.

RYE—SOWING GRASS-SEED.—W. H. W. (Halifax co., N. C.) We think rye is as favorable to grass as any other grain, excepting, perhaps, barley. We have sown grass-seed with winter rye, sown early in autumn, on dry ground, with good success—and have no doubt it would do well with spring-rye. The quantity of winter rye usually sown per acre is one and a half bushels—probably two bushels of spring rye per acre would not be too much. As to the kinds and quantity of grass-

seed, we do not see that we can give any information in addition to that offered on page 94, current volume. The course you suggest as to plowing in peas, &c., is apparently a good one.

WHAT FOOD WILL PRODUCE MOST WOOL?—L. D. (Richfield, N. Y.) Mr. Morrell, in the American Shepherd, page 230, gives the results of an analysis by De Raumer, from which it appears that

1000 lbs potatoes produced $6\frac{1}{2}$ lbs wool.

| | |
|----------------------|--------------------|
| “ mangel wurzel “ | 5 $\frac{1}{4}$ “ |
| “ wheat “ | 14 “ |
| “ oats “ | 10 “ |
| “ barley “ | 11 $\frac{1}{2}$ “ |
| “ peas “ | 14 $\frac{1}{4}$ “ |
| “ rye with salt “ | 14 “ |
| “ do. without salt “ | 12 $\frac{1}{4}$ “ |
| “ buckwheat, “ | 10 “ |

Mr. M. adds in reference to the above—“The legitimate conclusion from the foregoing is, that the flock-master, whose object is wool only, must rely on good hay and some straw, whose constituents are admirably adapted for the growth and perfection of wool, with a moderate allowance, daily, of ground peas and oats, and some potatoes as green food.”

FLOUR FROM BLACK SEA WHEAT.—“A Subscriber,” (Livingston, Alabama,) writes to know “what improvements have been made in the manufacture of flour from Black-Sea wheat?” as he has seen it stated in the Cultivator that it was supposed to make inferior flour till the millers learned how to grind it.” Will some of our friends inform him?

CHINESE GESE.—J. T. (Urbanna, O.) These geese can be had here in course of the season, duly caged, &c., at \$5 to \$6 per pair. They could be forwarded by canal to Columbus.

KNITTING MACHINE.—J. T. We know nothing more than what has already appeared about it.

WORKS ON HORTICULTURE.—E. W. H. (Macomb county, Mich.) Downing’s “Fruit and Fruit Trees of America,” is a work of 590 pages—price 1.50. The “Fruit Culturist,” by J. J. Thomas, (noticed in our last,) is 50 cents. They are for sale at most of the book stores.

CEMENT PIPES.—M. I. (So. Hartford, N. Y.) We have never supposed that the mode of making cement pipes, as described in the January No. of the Cultivator, was patented, and presume you run no risk in constructing pipe according to those directions.

“SUGAR PARSNIPS.”—J. E. H. (Huron county, O.) We do not know any variety of parsnip by this name. We suppose the “comparative value” of the root might be in a great degree proportionate to the sweetness.

USE OF LIME.—G. W. C. (Campbell co., Va.) We think lime is of the greatest benefit to soils containing the greatest amount of organic matter. We should apply to a plowed surface, and not work it in deeply.

CHARCOAL FOR MANURE.—S. H. (Mercer, Pa.) On moist grass-land, the refuse charcoal you mention would be a good top-dressing—on dryer soils, and for cultivated crops, it might be harrowed in. Our opinion is, that “it doth not yet appear” to what principle its fertilizing action is due; but there is no doubt about the effects. Charcoal is also the best article for absorbing the liquids of your stables and yards. The leached ashes you speak of, will be found valuable on most soils as a top-dressing—especially on sandy and gravelly loams.

WET LAND.—J. D. B. (Murfreesboro’, Tenn.) We hardly know what could be done with the land you mention. Are you sure it cannot be drained by opening the natural outlet? If it can be drained, it seems from your description that it would be good land. A little experiment will determine whether the soil would be valuable on upland fields.

GRAFTING GRAPE VINES.—A. C. (Edgartown, Mass.) Mr. Downing directs that scions be cut in winter and kept buried in a cool damp cellar till wanted. About the tenth of June, or as soon as the leaves of the old vines are fully expanded, cut off the stock smoothly below the surface of the ground, split it and insert one

or two scions in the usual manner, binding the cleft well together if it does not close firmly. Draw the soil carefully over the whole, leaving two or three buds of the scion above the surface.

AGRICULTURAL MEETING IN HOMER.

PRESENTATION OF A SILVER CUP TO MR. WOOLWORTH.

At a meeting of the farmers and citizens of Homer, at the close of Mr. WOOLWORTH'S course of lectures on Agricultural Chemistry and Geology, in March, it was resolved that, as a testimony of gratitude and esteem, they present him with a SILVER CUP. A committee, consisting of Messrs. PARIS BARBER and GEORGE W. CHAMBERLAIN, was appointed to select and purchase the cup. A committee was also appointed to prepare resolutions expressive of the sentiments of the meeting, consisting of Dr. E. MUNGER, Mr. AMOS RICE and Dr. C. GREEN.

Pursuant to a call of the committees, the farmers met in the Academy Hall, on the evening of the 14th inst., Mr. PARIS BARBER in the chair. There was present a large and respectable audience of ladies and gentlemen. The committee on resolutions presented the following report:

Whereas, S. B. WOOLWORTH has, during the past winter, given a course of lectures on Agricultural Chemistry and Geology, in the lecture room of the Academy, and has politely and generously given to the farmers and citizens in the vicinity, the privilege of attending the course gratuitously; and whereas we recognize in this first effort, in this country, of imparting to the cultivators of the soil a knowledge of Chemistry as applied to agriculture, an advance towards that eminence to which we believe the farmers of New-York will ultimately arrive; therefore,

1. *Resolved*, That we have been highly gratified in listening to this very able, lucid and practical course of lectures; that we have felt ourselves instructed in the great "art and mystery" of farming, and believe we may by adopting the principles laid down by the lecturer prosecute our high and noble calling with a fairer prospect of success.

2. That this effort of Mr. WOOLWORTH has not been that of an *adventurer*, for knowing the practical bearings of the principles of Agricultural Chemistry, he was willing to become a laborious pioneer in the noble enterprise of imparting chemical and geological science to farmers, and that, therefore, our gratitude is doubly due to him for this course of lectures.

3. That the clear and familiar manner in which these subjects have been presented—rendering them readily understood by those who had not hitherto attended to Chemistry as a science—fully demonstrates the practicability and usefulness of such courses of lectures.

4. Therefore that we earnestly recommend the institution of a similar course of lectures and instruction as that given by Mr. Woolworth in each of the various academies and high schools of our State, believing most firmly that the effect would be a most marked elevation of the condition of farmers both in point of respectability and wealth.

5. That the objections to "book farming" cannot exist in the minds of those who are acquainted with the principles of Chemistry and Geology and their application to agriculture.

6. That as a testimonial of our gratitude and esteem, we present Mr. Woolworth with a SILVER CUP, of which, though it by no means measures the extent of our regard for him, we beg his acceptance.

The report was followed by a short but highly interesting address by Mr. A. RICE, on the improvements in agriculture within the last quarter of a century. It was truly gratifying to listen to his account of the rapid progress in every department of farming within the last 10 or 15 years, and contrast it with the comparatively low condition in which it existed 30 years ago. What may we not expect, with the present ratio of improvement in the next 25 years? Mr. Rice having been selected by the committee to present the cup, closed

his remarks by a neat and appropriate address to Mr. WOOLWORTH, presenting him a plain but elegant silver cup, bearing on it an appropriate inscription. This was acknowledged by Mr. WOOLWORTH in a few chaste and cogent remarks, stating among other things of interest, that in the course of lectures alluded to, he had presented only some of the leading principles of agricultural science, but that he designed, at the next winter session of the Academy, to enter more fully into the subject and present it in a more extended manner.

We trust that these laudable efforts of Mr. Woolworth will be seconded by a full representation of farmers' sons in the Laboratory, and encouraged by the presence of the tillers of the soil in the vicinity.

A committee was appointed to prepare an account of these proceedings and secure its publication in the papers of the county and the agricultural journals of the State.

By order of the committee,
Homer, April, 1846. C. GREEN, Chairman.

CORN FOR FODDER—INQUIRY.

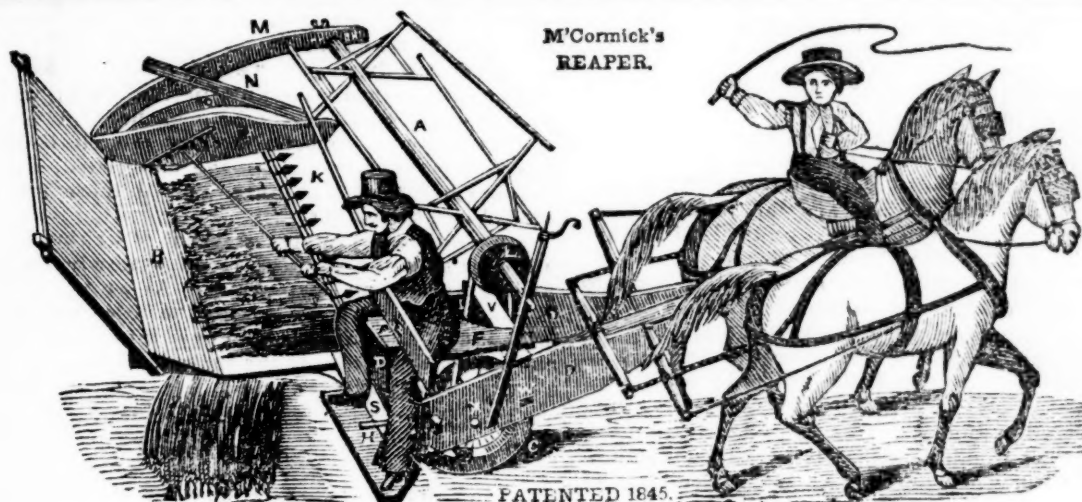
I sowed some two acres of corn the last year, with the design of soiling my milch cows during the dry weather, and short feed of the latter part of summer. But the drouth cutting off the hay crops, I was compelled to keep the corn for winter fodder. It was sowed on sward land, turned neatly over and well harrowed. The yield was heavy, (notwithstanding the drouth,) full seven tons of cured fodder to the acre. My cattle prefer it to any other food I have. They will leave pumpkins, potatoes, sugar beets, &c., to eat the corn-stalks when both are in the mangers. The saccharine matter is abundant, and if I had enough I should not regret the loss of my hay, nor fear for the cattle, this severe winter. I cut it when in the tassel, and when the more scattering stalks began to silk. It cost me about four days labor with two yoke of oxen to prepare the ground and sow the seed, and full six days labor to harvest an acre. And hence comes my inquiry. Is there any easier or cheaper way to harvest it than to reap the stalks, bind in small bundles, and stack them up to cure. This was the way I did; but it was very hard work, and took a long time. To cradle it was impossible; and I had no so hard work on my farm as the reaping and stacking an acre in six days. Has any one found a better way; if so, what is it? The stack (eight bundles) I let stand full six weeks before putting the corn in the barn; and now it is in fine order. It takes corn fodder a long time to cure. Ohio, January, 1846. H.

VALUE OF COB MEAL.

MR. EDITOR—It has been the opinion of most farmers, that corn cobs were of little or no value, and they have generally thrown them aside as of no use except for manure. The experience of some who have formerly fed corn and meal; and the anticipated scarcity of hay has led nearly all of our corn growers to turn their cobs into food for their stock. To show something of the extent which it has been used here, the following will give you some data to judge from. One mill in this town has, within the last three months, ground more than 5000 bushels of cobs, besides a large quantity of corn in the ear. This fact, I think, proves quite conclusively that cob-meal is valuable as an article of food for stock. Indeed the opinion which is expressed by those who have used it, is altogether in its favor. When they get out their corn, it is not threshed entirely clean; some 3 to 15 bushels of corn is left on the cobs. They are kept clean as possible till ground into meal. Cattle, horses, sheep, and hogs, eat it readily, without adding other grain. When fed to cattle in addition to hay, a marked difference in their condition and appearance is seen, from those fed on hay without the meal. Some feeders mix it with other grain, roots, &c., with marked profit and success. When fed with oil-cake, it is found to answer an excellent purpose, as it takes up all oil without waste.

Earlville, N. Y.

G. W. B.



M'CORMICK'S REAPER

This machine was patented in 1845, by C. H. M'Cormick, of _____, Virginia. It has been extensively used in most of the grain growing States of the Union, and if we may judge from the numerous certificates of those by whom it has been tried, it is a very effective

and valuable implement. By reference to Mr. M'C's advertisement, to be found in this number, it will be seen that the machine is warranted to cut from fifteen to twenty acres of grain in a day, and at a great saving of expense over the common mode of harvesting.

DESCRIBING FRUIT.

ED. CULTIVATOR—Allow me two or three comments on H. W. Beecher's excellent remarks relative to Downing's "Fruit and Fruit Trees of America."

He intimates that "*saccharine flavor*," means *sweet*; it is true that ought to be its meaning, but it is often applied to acid and sub-acid fruits. As examples, see the descriptions of the Alexander, Ribston pippin, Baldwin, Fall pippin, and other apples in Kenrick's Orchardist, which are all termed *sugary* or *saccharine* in flavor; and also Summer Queen, a quite sour apple, which Kenrick describes as "*sweet*." Many instances might be given in other writers, did time permit. I mention this point, to show the miserable looseness which has prevailed with nearly all pomological writers, relative to the unvarying and most important distinctive test of varieties, the flavor.

He says "a highly improved and luscious pear, not unfrequently is wholly seedless, while fruits not far removed from the wild state abound in seeds." Are there not too many exceptions to this rule, on both parts, for its correctness? The Seckel is regarded the richest of all pears, and is full of seeds; while some worthless seedlings have little or no seed.

An experienced person can often know a variety by the appearance of the young wood and growth of the tree, and nurserymen usually know at a glance the different varieties they cultivate, without seeing the labels. Hence great stress is laid on the importance of this distinctive trait in describing fruits. But a serious difficulty is not noticed. However well we may know varieties after we are familiar with their appearance by personal inspection, it is next to impossible to convey a knowledge of those appearances in words. We know a familiar acquaintance at the first glance of his face; and hardly a man exists but knows a thousand persons by looking in their faces, even though their names are not written on their cheeks; but the most minute description of the features would fail to convey a distinctive knowledge of the appearance of an individual. The light hair, the grey eyes, the bushy eyebrows, the hooked nose and sharp chin, might apply to fifty individuals, while that peculiar undefinable *expression* which cannot be described, is more characteristic than all. It is precisely the same with the appearance of varieties in trees; when once familiar, we know them well; but the points of distinction are too untangible to describe with precision. Hence this character, though useful, is not of the greatest importance.

J. J. T.

PROP FOR CLIMBING PLANTS.

The annexed figure represents a very convenient

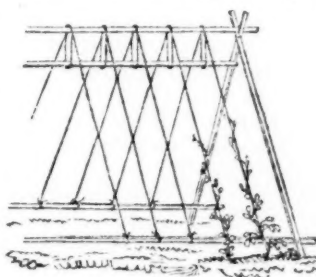


Fig. 60.

support for any climbing annual plants, whether useful or ornamental—it may be used for running garden beans, or for the ornamental Ipomeas, as the morning glory or cypress vine. Stretched cords are frequently used, as being often cheaper where extensively used, and possessing also a lighter and more elegant appearance. But their contraction by wet, where the cords are fastened to pegs in the ground, sometimes draws the plant up by the roots. The above represented contrivance removes this difficulty, and is at the same time very expeditiously made. Take narrow strips of board, or lath, and fastening two of them together by a nail near the top, as shown in the figure, and spreading the lower ends so as to form a moderately acute angle, stick them into the ground. Two more are arranged precisely similar, (not represented in the figure,) and placed at several feet distance from the former. These are connected by similar pieces of lath at the bottom, on each side, three or four inches from the surface of the earth. A slender, round pole is also laid on the short fork at the top formed by the intersection of the upright laths. Cords, all of equal length, are then tied to the lower horizontal pieces, and passed once round the upper horizontal pole, so as to form a hanging loop about a foot in length. Through these loops a pole is thrust, and sufficient weights hung upon it to keep the cords always sufficiently stretched; and which will rise and fall with the contraction and expansion of the cords. In this way, in fact, the pole by rising and falling, serves as an imperfect hygrometer.

Very cheap cords, lasting one summer, may be made by twisting strings of bass, which is made by soaking the bark of large basswood trees a fortnight in water, peeling off the inner portion, and then soaking the remainder a month and peeling the rest. The bark may usually be had in abundance in the early part of summer, at saw-mills, and must be perfectly fresh from the log when it is immersed in water.

A cat, after being twenty-one days under hay, without food or drink, has completely recovered.

NOTICES OF NEW WORKS.

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THE FARMER'S DICTIONARY: a vocabulary of the technical terms recently introduced into Agriculture and Horticulture from various sciences; and also a compendium of PRACTICAL FARMING; the latter chiefly from the works of the Rev. W. L. Rham, Loudon, Low, and Youatt, and the most eminent American authors. By D. P. GARDNER, M. D. HARPER & BROTHERS, New-York.

The first design of this work, seems to have been to furnish a short explanation of technical terms which have latterly been introduced into agricultural writings. The author well remarks, that a great "drawback to the advancement of our art is the indefinite words used among us." Thus "we find," he says, "one writer using the word 'withers' for the shoulder of an animal, another for the womb." So far as we have examined that part of the work devoted to the explanation of technicalities, it seems to have been judiciously executed, and will no doubt be found very useful. The various tables showing the analyses of the ashes of plants, will no doubt be found valuable. The *practical* part of the book, is almost wholly a compilation from English authors. How far the matter contained in this part may be applicable to this country, we are hardly able, from present examination, to say. We shall probably recur to the work again.

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AMERICAN JOURNAL OF SCIENCE AND ARTS.—The number of this valuable periodical for March has been received. Though we cannot notice the contents in detail, we remark that they are particularly interesting. In an article by WM. M. CARPENTER, on some Fossil Bones, found in Tennessee and Texas, we find that the "*Gigantic Fossil Man*, eighteen feet high," said to have been found in Tennessee, such astonishing accounts of which have been spread through the country in the newspapers, turns out to be the skeleton of a *young mastodon*. In the same article, a description and cut is given of part of a skull, horns, and teeth of a fossil ox, found in Texas. From the parts found, it is thought that the distance between the tips of the horns, in the living animal, could not have been less than eleven feet. In the Athenaeum, Zanesville, O., there is a part of a skull and horns, said to have been found in Kentucky, which, from appearance, belonged to a larger animal, of the same species above mentioned. In an extract from a letter written by CHAS. LYELL, it is shown beyond question, that the bones of the fossil animal which has been exhibited in New-York by Mr. Koch, under the name of *Hydrarchos*, were procured at several different places, and under such circumstances as to leave no doubt that they belonged to several distinct individuals.

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AMERICAN JOURNAL OF AGRICULTURE.—This work, the publication of which was for a while suspended at the close of the first year, has been resumed under the charge of Prof. E. EMMONS and Mr. A. OSBORN. We have received the first number of the new volume. It is handsomely printed, and contains 160 pages octavo. A well executed portrait of Gov. WRIGHT, constitutes the frontispiece. A little more than one-half the matter is original; the remainder is chiefly extracts from other Journals. Among the original articles we were well pleased by the perusal of an able and sensible one on the "THEORY OF AGRICULTURE," by Prof. EMMONS.

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LARDNER'S LECTURES.—We have received Part XIII, which treats of the Steam Engine in various forms. We consider these Lectures among the most valuable reading that has ever been offered to the American public. Published by GREELY & McELRATH, Tribune Buildings, New-York—price 25 cents per No.

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☞ We have received the first number of a work, so novel in its character, that we are tempted for once to step out of our line of business, to notice it. It is the "*American Phonographic Journal*," to be published

monthly by ANDREWS & BOYLE, 337 Washington st., Boston. As we have no acquaintance with the science of which it is the organ, we can of course only speak of the mechanical execution of the work, which is certainly very creditable to the publishers. It is entirely engraved upon copper-plate, and though the characters look crabbed enough to the uninitiated, we doubt not they are "plain as preaching" to those who have looked into the matter.

We see that this improved system of writing has long attracted attention in Europe, and is slowly but surely finding students in this country. As we believe there is *something in it*, we invite the attention of those who are willing to examine a new thing with a candid and unprejudiced eye, to the subject. The price of the *Journal* is only \$1 per annum.

AGRICULTURAL SOCIETIES.

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NEW-YORK STATE.—The meeting of the Executive Committee of the N. Y. State Ag. Society for this month, will be held at the *American Hotel* in AUBURN, on Thursday the 14th inst. At this meeting, the appointments of Judges to award the Premiums at the Fair to be held at Auburn in September next, will be made. A full attendance of the members of the Ex. Committee, consisting of all the officers of the Society, is very desirable.

SARATOGA COUNTY.—Fair to be held at Saratoga Springs, Oct. 21, 22.

RENSSELAER CO.—Fair at Troy, Sept. 23, 24.

ALLEGANY CO.—Officers elected at last annual meeting:—Laurens Hull, Angelica, President; Joel Karr and Bryce Kerr, V. Presidents; R. Church, Recording Sec., and A. B. Hull, Angelica, Cor. Secretary and Treasurer.

SENECA CO.—Fair to be held at Waterloo, Oct. 22, 23—John Delafield, Geneva, President, and J. W. Bacon, Waterloo, Rec. Secretary.

SUFFOLK CO.—Fair to be held at Comac, Oct. 1—J. L. Smith, President, and N. Smith, Sec., Smithtown.

RUTLAND CO., (Vt.)—This Society, which has been recently organized, has issued its Premium List for the present year, but the time and place of holding the Fair is not stated. Frederick Button, Clarendon, President; J. C. Thrall, Rutland, Rec. Secretary, and W. C. Kittredge, Fairhaven, Cor. Secretary.

JEFFERSON CO.—At the winter meeting, Geo. White of Rutland, was elected President; Edward S. Massey, Rec. Secretary, and J. C. Sterling, Watertown, Cor. Secretary. Receipts of the Society last year, \$673.11. Payments, \$497.36.

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DUTCHESS CO. HORT. SOCIETY.—This society, which was organized the past winter, has issued a liberal list of Premiums for early Fruits and Vegetables, to be awarded at an exhibition to be held at Poughkeepsie on the 18th and 19th of June. We cannot but hope that this society is destined to a better fate than has awaited all the Horticultural Societies, which have heretofore been organized in the Valley of the Hudson, with the exception of the one in Columbia county, which we believe has been eminently successful. Dutchess possesses many of the most highly improved gardens in the State, and they are owned by gentlemen whose liberality will not, we are confident, permit their Hort. Society to languish for want of funds. The great obstacle to the success of such associations, is, generally, the want of some individual to perform the labor necessary to give them vigor and usefulness. Men ought to (and no doubt will) be found in Dutchess county, who will devote the time and labor necessary to insure their society abundant success.

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MADDER.—In answer to an inquiry in our last No., THOS. WATSON, Jr., of Torrington, Conn., informs us that he "can furnish several bushels of the *slips*, which are generally used for propagating it, if applied for soon. The time for planting is from the 1st to 20th May. About 10 bushels of the slips are necessary for an acre."



ALBANY, MAY, 1846.

TO CORRESPONDENTS.

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COMMUNICATIONS received since our last, from Junius, A Subscriber, J. C. Adams, T. S. Meacham, Stephen Warren, Wm. Jennison, C. Ingalls, Will. H. Wills, Z. C. Robbins, F. A. Wier, J. E. Macomber, A Subscriber, John Shillaber, P. Barber, Robert White, Jr., A. Rose, T. Watson, Jr., L. B.

BOOKS, PAMPHLETS, &c., have been received as follows:

Guenon's Treatise on Milch Cows—republished from the Farmers' Library. (See advertisement.) GREELY & M'ELRATH, publishers, New-York.

Address before the Albemarle (Va.) Ag. Society, by FRANKLIN MINOR.

Marl—a Letter addressed to the Ag. Society of Jefferson county, Georgia, by J. H. HAMMOND.

Descriptive Catalogue of articles for sale at the Agricultural Warehouse of A. B. ALLEN, New-York.

We have received from W. S. HARDING, of Franklin, Louisiana, a barrel of sugar of his own manufacture. It is an excellent sample, coarse grained, dry, and of good flavor.

MONTHLY NOTICES

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THE FRUIT CULTURIST.—For notices of this new and valuable work, see advertisement in this paper.

TEMPERANCE.—We have received from Mr. CYRUS INGALLS, New-Hartford, N. Y., a well-written article on the subject of temperance—a subject of great importance to farmers, as well as to all other citizens. But our paper is designed chiefly as a medium of communication in relation to matters directly connected with agriculture, and we have generally so great a press of articles of this description, as to leave no room for others, however important or valuable in themselves considered.

RUST IN WHEAT.—Mr. SAMUEL WARRING, of Morrisdale, Pa., supposes that a great cause of rust in wheat is the retention of too much water by the soil and subsoil. As a reason why some sections are more subject to rust now than formerly, he mentions that the roots of trees caused a natural drainage of the soil until, after several years, they entirely decomposed and the spaces they occupied, became filled with soil. A remedy for rust on such soils, would of course be draining and subsoiling. He advises sowing wheat on "narrow and round ridges with proper lateral water courses well cleared out with the spade."

BUDDING FRUIT TREES.—JOSHUA H. ORDWAY, who received the first premium of the Essex Co. Ag. Society for the management of fruit-trees, says: "I practice shield or T budding, and put the bud on the south-west side of the tree, the rows running south-east; they are then not exposed to the sleet and snow of winter. I formerly lost many buds by inserting them on the 'back' side of the tree. Another advantage of putting the bud on the south, is the greater portion and quicker flow of sap on that side, as every one knows that a bud takes best where there is the most sun and sap. I learned some twenty years ago, to take out the wood from the bud, but soon gave up the practice, and should now as soon think of taking out the pith of a scion." In regard to transplanting fruit-trees, Mr. O. says he has had much the best success when removing them early in the spring. "Young trees set in the fall," he observes, "are liable to be thrown out by frost."

And all, whether large or small, often suffer injury by having their roots severely frozen when the ground is bare during our severe winters."

THE HORSE BLACK-HAWK.—By reference to our advertising columns, it will be seen that this celebrated horse will stand this season at the stable of his owner, Mr. D. HILL, in Bridport, Vermont.

RATA TREE IN NEW ZEALAND.—This is at first a parasite, which winds round and encircles large trees, and destroys them; its numerous coils joining and forming a hollow trunk, leaving the victim to rot inside. When full grown, it is the monarch of the New-Zealand forest. Its form is gnarled and contorted. It is of the myrtle tribe, and bears bright crimson blossoms in such abundance, that the whole tree is in a glow; and being abundantly intermingled through the forests, presents a magnificently variegated appearance.

PRODUCE OF WHEAT.—On the 18th of August, 1805, Mr. Ch's. Miller, of Cambridge, Eng., took a plant of wheat which had been sown the beginning of June, and divided it into eighteen parts; each of which was transplanted separately. About the latter end of September they were again removed and divided into sixty-seven roots. In March following and the beginning of April, they were separated into 500 plants, which yielded 21,109 ears, containing 570,000 grains, measuring 3½ pecks, and weighing 47 lbs.

FOREIGN.

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By the Caledonia, arrived at Boston on the 20th of April, we have English and Scotch papers to the 3d ult. There is a fair prospect that "Peel's new tariff" will pass the House of Commons—it has already passed a second reading. The markets are yet very dull—cotton has scarcely advanced at all—little is doing in flour—for Indian corn there is a moderate demand, though this article had a little declined at the latest dates. Trials have, however, been made of Indian corn-meal to a considerable extent, both in England and Ireland, and the result seems to indicate that the prejudice which has been entertained against it, will wear off when its value is known. There is not as much alarm, in relation to the scarcity of food for the lower classes, if we may judge from remarks in the papers, as has before prevailed. The prospect is good for agricultural products generally—wheat and grass very promising. The Agricultural Gazette of March 7th, says: "There is more food for stock at the present moment in many parts of the country, than there was four months earlier in the season at the corresponding period of last year." Speculation in regard to the origin of the potato disease, is as busy as ever, and without any more probability of arriving at any general conclusion.

PRICES OF AGRICULTURAL PRODUCTS.

New-York, April 22, 1846.

COTTON—New Orleans per lb., 6½a10c.—Florida, 6½a9—Up-land 6½a9—Alabama, 6½a9.
 BUTTER—per lb. 14a16c.
 CHEESE—Per lb., 7a8c.
 FLOUR—Genesee, per bbl, \$5 50—Baltimore, Howard-street, \$5.06a\$5.12½—Richmond City Mills, \$6.25.
 GRAIN—Wheat, Genesee, per bushel, \$1.25—Rye, 74a75c.—Corn, northern, 68a71—southern, 67—Barley, 62a65—Oats, northern, 44c.
 HEMP—Russia, clean, per ton, \$205a\$210—American dew-rotted, \$80a\$100—water-rotted, \$130a\$140—Manilla \$155.
 HAMS—Smoked per lb., 7½a9½ cts.
 BEEF—mess, per bbl., \$7.50a\$9.10—prime, \$5.25a\$5.50
 LARD—6½a7½c. per lb.
 PORK—Mess, per bbl., \$10.62a\$11.12½.
 TOBACCO—Kentucky, per lb., 3a7c.

WOOL—(Boston prices.) April 18:

| | |
|---|------------|
| Prime or Saxony fleeces, washed per lb..... | 40a41 cts. |
| American full blood fleeces..... | 37a38 " |
| " three-fourths blood fleeces..... | 32a33 " |
| " half blood do | 30a31 " |
| " one-fourth blood and common..... | 27a29 " |

FARMS FOR SALE.

I OFFER for sale *cheap*, two good farms, of 150 acres each, with dairy stock, &c. The one which I occupy is in Ellisburgh, the other in Pamela. Or I will exchange them for a good farm of equal value, in a good and healthy location, from 3 to 6 degrees farther south, a milder climate being desirable.

DANIEL ROUNDS.

Ellisburgh, Jefferson Co., April 1, 1846.—21*

McCORMICK'S REAPER.

BROCKPORT, March 20, 1846.

THE undersigned respectfully offers his PATENT REAPER to the farmers of New-York, and the Western States generally; and while he believes that no labor-saving machine has ever been introduced into public favor more cautiously, and at the same time with more general satisfaction to purchasers than his Reaper, he has the satisfaction of being able to present it for the harvest of 1846, in a greatly improved state. He can now warrant the raking of the wheat from the machine to be accomplished with ease and completeness, by a man comfortably seated upon it, whose position may be seen from the cut in another part of this paper. This improvement was thoroughly tested in the last harvest with the most signal success, and as is believed, perfects the "Reaper." An account of its operation on the estate of the late Gen. Mills, of Mount-Morris, by Samuel J. Mills, Esq., is hereto subjoined.

This machine unlike many of the improvements of the present age, is not now offered to the public either as an untried experiment, or only having been partially tested, and therefore not to be relied upon. It has been extensively and most successfully in use in Virginia, since the harvest of 1842, and during the last two years has been extensively introduced into most of the wheat growing States of the Union, completely silencing opposition. So wide has been its range of operations in the last harvest, that it would be impossible, in a publication of this description, to give all, or even very many of the numerous certificates that have been procured of its satisfactory performance. Hand Bills will be issued in the course of a few days, by Messrs. Backus, Fitch & Co. of Brockport, Monroe Co., containing not only a description of the Machine, but the most full and unequivocal testimony of its usefulness and value to the farmer, by numerous individuals of the very first respectability who have used it, and witnessed its operations. The terms on which this Machine may be had, and the guaranty that will be given on its side, should induce every farmer whose lands and crops suit its operation to give it a trial—as, should it prove equal to the guaranty, it will do more than pay for itself in the cutting a single harvest. Any person can make the calculation for himself. As improved, one man to rake, and a boy to drive the horses, will attend the Machine, instead of two full hands as before, and from two to three acres more in a day may be cut by the improved than by the old Machine, by means of the greater ease with which it is done, which makes a great difference in a single harvest of any extent—say \$25 or \$30.

The Reaper is warranted to cut from 15 to 20 acres a day—to save an average of a bushel of wheat to the acre that would be lost by ordinary cradling, to be durable, and not liable to get out of order, and the raking as stated above. Price \$100, payable on delivery at Brockport, Monroe Co., New-York, or time shall be given for good paper, drawing interest.

The undersigned further proposes to send his reaper to any responsible farmer, (or farmers,) who may desire to make a trial of it alongside, and on the same terms of any other, to be purchased or refused, as decided on making such trial.

The undersigned, Patentee of the Machine, has contracted with Messrs. Backus, Fitch & Co., of this place, experienced, well known, and established manufacturers, for the making of a large number of Reapers for the ensuing harvest, to whom orders may be directed. Many orders have been already received from the west, as well as from the surrounding country; therefore any persons desirous of Machines would do well to make early application, as it is not probable that all demands can be supplied.

C. H. McCORMICK.

From the Mt. Morris, N. Y. Spectator.

Mr. Harding: Dear Sir—Having made a trial of Mr. Cyrus H. McCormick's Reaping Machine for cutting grain, I take pleasure in making a public statement of it agreeably to his wishes. Mr. McCormick, the inventor, introduced his Machine here from Virginia. He did not arrive with it until the season for cutting wheat had nearly passed—and consequently cut only about thirty acres for me. The ground was level, being on the Genesee Flats, though the surface was somewhat uneven, as it was a piece turned over last fall, when put into wheat, with a very heavy turf, and many of the sods still remaining on the top of the ground. But they seemed to form no impediment to its successful operation. The machine cut one piece of twenty-five acres in a little less than a day and a half, averaging about two acres per hour for the time it was in operation. The wheat cut, if well filled, would yield about thirty bushels to the acres. The grain was cut cleaner, and more even than could have been cut with the cradle or sickle. It is drawn by two horses with ease, and is attended by a man to rake, and a boy to ride and drive. The raker rides on a seat attached to the Machine, and takes the wheat off at the side in gavels, ready for binding. The Machine is simple in its construction. The knife has a sickle edge, and plays horizontally; and is represented to cut one hundred acres or more without sharpening. The reel gathers the wheat for cutting, and lops it over on the table for the raker. I design to use the Machine the next season. I have no doubt it would work well on up lands, where tolerably free from stumps and large stones.

A number of persons, who were present and witnessed its operation, uniformly, I believe, expressed much satisfaction.

An incident occurred which may not be out of place to mention. Two cradlers, hearing that a machine was in the lot for cutting wheat, never having seen one, and believing that they could cut faster and better than any live Machines, started with cradles in hand, with the determination (to use their own words) of "skunking it." As they reached the fence, in sight of the Machine, and saw the rapid pace with which it moved, they hid their cradles in the crook of the fence and sloped off.

Yours, &c.

SAMUEL J. MILLS.

Mount-Morris, August 15, 1845.

Gen. Braxton's Certificate.

CHERICKE, Va., Dec. 10, 1845.

Dear Sir—I have now used your Reaper four seasons, and have no reason to withdraw any thing I have said in its favor heretofore. It has fully met my most sanguine expectations, and I cannot think that any farmer, having once tried it, would ever again willingly go into harvest without one or more, as might be the size of his farm. I have never found any difficulty in keeping them in order; in fact, much less than with the cradles. Although the two that I have work remarkably well, as you think your late improvements have so materially benefitted the Reaper, I must request you to send me one for the next harvest.

am, very respectfully,

Your obedient servant,

CORBIN BRAXTON.

To Mr. C. H. McCormick.

Gen. Cocke's Certificate.

December 13, 1845.

I have used one of Mr. McCormick's Reapers, and am satisfied, experimentally, of its value as a labor-saving machine; and, furthermore, that it saves something like a seeding of the land, over and above the process of cradling—I have, therefore, ordered another upon the improved plan, at Mr. McCormick's recommendation.

JOHN H. COCKE.

CARLTON, Dec. 15, 1845.

Having now used McCormick's Reaper in three harvests, I willingly bear renewed testimony to its value. Under the belief that the late alterations in its construction, can scarcely fail of enhancing its utility and diminishing the labor of raking, I have engaged a new machine for the next harvest.

ALEX. RIVES, Brother of the Senator.

ELK HILL, Dec. 13, 1845.

Dear Sir—I cheerfully comply with your request to give you for publication, my opinion in regard to your Reaper. I do this the more readily, because I believe its introduction into general use would be a great public benefit.

In the commencement of the last harvest, I put two Reapers in operation in Elk Island in a field of 180 acres, at the same time I started 14 cradles in a highland field, at this place, of the same quantity of land. The reapers on the Island and the cradles on the hill finished their work at the expiration of six days. There was not an hour's difference. If the cradles had been on the Island, instead of the highland, I do not think they could have performed more than two-thirds of the work. On the low grounds, therefore, where the harvest is generally heavy, I consider the "Reaper" to be equal to 10 cradles. I found one cradle to be sufficient to open the way for the two Reapers. This, with the addition of the drivers, the rakers, and five pickers up, stationed around the field to each reaper, constituted a force of fifteen hands—not estimating the shockers. The 14 cradles on the hill were followed by an equal number of pickers up—making 28 hands. If my estimate of the comparative labor of cutting with the scythe on the highland and low-grounds be correct, it would have required 40 hands to cut and pick up the crop on the Island in the same time that the work was done by 15 hands with the reapers. I have not estimated the labor of the horses, which were changed three times a day, as, in the time of harvest, they would otherwise be idle. The labor of the hands, except that of the raker, is easier than in the harvest field where cradles are employed. And even the raker, when he becomes accustomed to the operation of the machine, and learns to be deliberate—waiting till the apron is pretty well filled with wheat before he rakes it out, finds this work very practicable. By changing places occasionally with the driver, the labor of both is comparatively easy.

The Reaper cutting across the beds on low grounds, does far better work than can be done by cradles. I never saw a low ground field cut so clean as that on the Island. There is far less loss, too, by scattering. The wheat being thrown in piles of three or four sheaves, there is a saving of one third of the number of pickers up. It has been customary to pay on this estate \$200 harvest hire. In the last harvest, I paid only \$30. Another item of expense, by no means inconsiderable, which is saved by the use of the reaper, is the feeding of a large number of hands. I have seen it stated that the actual saving in wheat, was half a bushel to the acre, and I should think it a moderate estimate.

The construction of the Reaper is simple. The knives did not require sharpening, just beginning to be rather dull at the close of the harvest. I think we saved more than the cost of the reapers, which are uninjured, except that the knives will require sharpening. We have besides two new knives to begin the next harvest, each reaper having an extra knife.

I have confined my remarks to the operation of the Reaper on low-grounds; but from an experiment of a day's cutting they perform equally well on high land where the wheat is good, and the land free from stumps and stones.

I am so well satisfied of the utility of your reaper, that I shall want another on the other side of the river before the next harvest.

I am, dear sir, very respectfully, yours, &c.

To Mr. C. H. McCormick.

P. HARRISON.

PATENT PREMIUM FAN-MILLS.

I. T. GRANT & Co., still continue to manufacture the celebrated Improved Patent Fan-Mills, at the old stand, Junction, Rens. Co., N. Y. These mills have taken the *first premium* at the following places:—New-York State Fair, at the Institute, New-York, the State Fair, at Pennsylvania, and the State Fair at Maryland. The subscribers have no hesitation in saying that these mills surpass anything of the kind ever offered in market. They are the only mill that has ever been produced that will chaff and screen wheat perfectly clean in one operation.

We also manufacture *Grain Cradles* of the very best quality, which have taken the first premium at the New-York State Fair. They are for sale at factory prices, at the following places:—

A. B. Allen's, 187 Water-st., New-York;

D. L. Clawson's, 191 " "

E. Comstock & Co.'s, Albany;

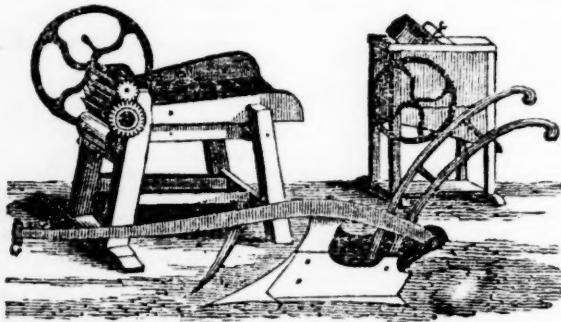
H. Warren's, Troy; and

Viall & Warren's, Mechanicsville, Saratoga Co., N. Y.

All orders thankfully received and punctually attended to. All goods delivered at Troy, N. Y., free of charge.

I. T. GRANT, & Co., Junction P. O., Rens. Co., N. Y.

Feb. 1—tf [2]



PROUTY & MEARS, BOSTON

CELEBRATED, highly approved, and unequ. ed **CENTER DRAFT PREMIUM PLOWS**—for sale at their *sole agents*,
JOHN MAYHER & Co.'s

Agricultural Warehouse, 195 Front-st., near Fulton, New-York.

The subscribers have just received a large assortment of Prouty & Mear's celebrated and highly improved **CENTER DRAFT PLOWS**, which are in every way *superior to all others now in use*; and having been appointed sole agents for the sale of the same in the city of New-York, we invite the public to call and examine for themselves, as the above plows cannot be obtained at any other establishment in the city. Dealers and others in the country supplied on the most reasonable terms.

We also wish to inform merchants and farmers that we have constantly for sale plows of our own manufacture, and all others now in use.

The following is a list of prices of some of the plows manufactured by us.

| | |
|----------------------------|--------|
| A No. 1, Worcester patent, | \$1 50 |
| A " 2, " " | 2 00 |
| A " 3, " " | 2 50 |
| 2 B " " " | 3 50 |
| 2 B " " with colter, | 4 00 |
| Eagle, No. 1, " " | 4 50 |
| " " 2, " " with colter, | 5 00 |
| " " 2, " " with colter, | 5 00 |
| " " 2, " " with colter, | 5 50 |
| Meadow C " " with colter, | 5 50 |
| " " " " with colter, | 6 50 |

Castings to fit the Worcester Ploughs, 3½ cents per pound.

We likewise have for sale the most extensive assortment of *Agricultural Implements* ever offered in this city, most of which are new and highly improved patterns, warranted to be made of the best materials, and of very superior finish, among which are the following:

| | |
|--|--------------------------------------|
| Pitts' Corn and Cob Crusher, | Sinclair's Stalk and Straw Cutter, |
| Hussey's " " " | Hovey's " " " |
| Sinclair's " " " | Stevens' " " " |
| Hussey's Reaping Machine, | Greene's " " " |
| Bark Mills, 4 sizes, | I. T. Grant & Co.'s Prem. Fan Mills, |
| Coffee " " " | Clinton's Prem. Fan-Mills, |
| Corn Shellers of all kinds, | Rice's " " " |
| Horse Powers " " " | Holmes' " " " |
| Threshing Machines " " " | Store Trucks, Wheelbarrows, |
| Subsoil Plows, of the most approved kinds, | Mule Waggons, &c. &c., |
| Cultivators of the most approved kinds, | |

Langdon's much approved Cultivator Plows or Horse Hoe. All kinds of plow castings constantly on hand. All the above articles are offered for sale on the most reasonable terms. Castings of all kinds made to order.

JOHN MAYHER & Co.,
195 Front-st., N. Y.

N. B. Beware of Imposition. Any person offering plows for sale, and representing them to be of our manufacturing without the full name "**J. MAYHER & Co.**," on the mouldboard and beam of the plows, are guilty of a *false representation*, as no person in the city and county of New-York has the genuine article for sale but ourselves. April 1—tf [2]

J. M. & Co.

FIELD-SEEDS AT THE ALBANY AGRICULTURAL WAREHOUSE.

300 BUSHELS BLACK SEA WHEAT, both red and white varieties.

| | |
|-------------------------------|------------------------------|
| 200 bushels Italian wheat. | |
| 200 " Marrowfat Peas. | |
| 75 " Black-eyed Peas. | |
| 100 " Canada Peas. | |
| 15 " Emir or Skinless Barley. | |
| 150 " Four rowed Barley. | |
| 250 " Two rowed Barley, | (an uncommonly fine sample.) |

CORN.

"Large Dutton," 12 rowed;
"Improved Dutton," 12 rowed, raised by S. W. Jewett, Vt.;
Long 8 rowed yellow;
Madawasca or early Canada
White Flint, (long ears,)
Small White Flint.

CARROT.

100 lbs. Large white;
150 " Long Orange.

TURNEPS.

350 lbs. Ruta-baga or Swedish;
100 " Large English Norfolk;
100 " White flat, or winter.

GRASS SEEDS.

Timothy, best quality, Orchard Grass,
Northern Red Top, Southern Red Top,
Large Northern Clover, Western Medium Clover,
Lucerne or French Clover, White Dutch Clover.

All the above may be had of best quality, at the Albany Agricultural Warehouse and Seed Store, 23 Dean-st.

March 1.

E. COMSTOCK & Co.

AGRICULTURAL WAREHOUSE,

By *Ezra Whitman, Jr.*, 55 Light-street, Baltimore.

THE proprietor of this establishment is the sole agent in Baltimore and vicinity, for the sale of the following *new* and valuable improvements, viz:

Whitman's improved Rail-way Horse-Power and Threshing Machine, which threshes and cleans the grain at one operation.

Prouty and Mear's Centre Draft Plow.

"Hovey's Premium Straw Cutter.

I. T. Grant & Co.'s Premium Fan-Mill.

Douglass' Premium Pumps, which are so constructed as to prevent freezing in the coldest of weather.

Rogers' Mill, for cutting and grinding corn stalks.

Together with a general assortment of the *latest* and most *approved* agricultural implements, constantly on hand, and manufactured to order.

Baltimore, Nov. 14, 1845.

EZRA WHITMAN.

BURRALL'S CORN SHELLER.

THE subscribers are now fully supplied with this valuable Sheller so as to be in readiness hereafter to fill orders for any number, without delay. A further trial during the last month has fully established the superiority of this over all other Shellers for hand power. For description, engraving, &c., see Cultivator for February, page 60. Retail price \$10, with a liberal discount at wholesale.

E. COMSTOCK & Co.

Albany Agrl. Warehouse.

March 1st, 1846.

VALUABLE FARM AND COUNTRY SEAT FOR SALE.

THE subscriber offers for sale the Farm on which he now resides, situate in Southwick, Hampden county, Mass. The road from Hartford to Northampton, via Westfield, along which a mail coach passes daily, and nearly through the centre of the Farm, which contains about 400 acres, nearly half of which is wood land, heavily timbered. It is bounded on one side by the Farmington canal, which renders the communication with New-Haven, an excellent wood market, easy and expeditious. The buildings are a mansion house, with a wing, the latter new making a front of 70 feet. Also a house for a tenant; three large barns, nearly new, covered with pine and painted; a corn house, carriage house, sheds, &c. Great pains have been taken in selecting and cultivating choice fruit, and there is now on the Farm, in full bearing, a great abundance of the best varieties of apples, cherries, peaches, &c. A part of the land is of superior quality, and on almost every lot is living water.

Tariffville, a large manufacturing village, seven miles distant, affords a ready market for wood and every kind of produce, raised on a farm. This is one of the most valuable and desirable locations in the country, not only for farming purposes, but for the gentleman of leisure. A large portion of the purchase money, if desired, can remain for a term of years. I will sell the whole together, or in two parts. Letters of inquiry addressed to me, will receive prompt attention, or inquiry can be made of **LUTHER TUCKER**, Albany, or of **R. SHURTLEFF**, Springfield.

ROGER S. MOORE.

Southwick, March 1, 1846.—3t

THE "**TELEGRAPH PLOW**," a light and beautiful plow for cross-plowing, &c., as well as for green sward. A supply always on hand at the Albany Ag. Warehouse.

April 1.

E. COMSTOCK & Co.

TREATISE ON MILCH COWS.

PUBLISHED on the first day of April, 1846, a Treatise on Milch Cows, whereby the quality and quantity of milk which any cow will give may be accurately determined by observing Natural Marks or External Indications alone; the length of time she will continue to give Milk, &c., &c. By M. FRANCIS GUENON, of Liborne, France. Translated for the Farmers' Library, from the French, by N. P. TRIST, Esq., late U. S. Consul at Havana, with Introductory Remarks and Observations on the

COW AND THE DAIRY,

by JOHN S. SKINNER, Editor of the Farmers' Library, illustrated with numerous engravings.

Price for single copies, neatly done up in paper covers, 37½ cents. Full bound in cloth and lettered, 62½ cents. The usual discount to Booksellers, Agents, Country Merchants, and Peddlers.

Farmers throughout the United States may receive the work through the mails. The postage on each copy will be about 7 cents. By remitting \$2, free of postage, we will send seven copies of the work done up in paper covers.

Country merchants visiting any of the cities can procure the work from Booksellers for those who may wish to obtain it. Please send on your orders. Address

GREELEY & McELRATH, Publishers,
Tribune Buildings, New-York.

April 1—3t

ROCHESTER SEED STORE AND WAREHOUSE
FOR FARMING TOOLS,

Nearly opposite the Market, Front-st., Rochester, N. Y.,

BY JAMES P. FOGG.

THE co-partnership heretofore existing under the firm of B. F. Smith & Co., was dissolved on the first day of January, 1846. The subscriber having purchased the interest of Mr. Smith, will continue the business as heretofore, on his own account.

The subscriber is well aware of the important relation which the seedsman holds to the whole farming community, and that upon his honor and veracity the crop and profit of a season in some measure depend. The greatest care has been used in selecting the seeds offered at this establishment for the ensuing year, and they can be relied upon as pure and genuine, carefully selected and raised from the very best varieties, and properly cured. Many kinds were raised in the immediate vicinity of this city, by Mr. C. F. Crozman, and under the inspection of the proprietor; others were raised by experienced growers; while those varieties of foreign growth, which experience has shown are the best, such as Cabbage, Cauliflowers, Brocoli, all the varieties of Garden and Field Turnep, Scarlet Short-Top Raddish, Scarlet and White Turnep Raddish, Dwarf and Early Peas, with twenty choice varieties of FLOWER SEEDS, have been imported by the subscriber from the long established house of R. WRENCH & SONS, of London.

FIELD SEEDS.

Red and White Clover, Timothy, Barley, Seed-Corn, Italian and Siberian Spring Wheat, Early June Potatoes, Marrowfat and other Field Peas, Rye-Grass, Orchard-Grass, Lucerne &c., &c.

VEGETABLE GARDEN SEEDS.

A choice and select variety of Peas, Beans, Cabbage, Cauliflower, Celery, Beets, Cucumbers, Melons, Raddish, Squash, Herb-seeds, &c.

FLOWER SEEDS.

The collection of Annual and Perennial Flower Seeds, contains many new and choice varieties.

AGRICULTURAL AND HORTICULTURAL TOOLS.

At the Ware-Room, adjoining the Seed Store, may be found an extensive and complete assortment of Agricultural and Horticultural Implements, embracing almost every tool used in the cultivation of the Farm and Garden.

SUPERIOR PLOWS.

The celebrated Massachusetts Plows, of three sizes. Several hundred of these Plows, have been sold in Rochester, and vicinity, and have given entire satisfaction. Also, Delano's Diamond plow, Subsoil and Side-hill Plows—The Gang-Plows—Two Horse Cultivators, for working summer-fallows, and getting in wheat. Corn Cultivators, Root-Cutters, Corn-Planters, Drill-Barrows, Hoes, Shovels, Seythes and Snaths, Garden-Rakes, Corn-Shellors, Straw-Cutters, &c., &c.

JAMES P. FOGG,

of the late firm, and successor to B. F. Smith & Co.

Agents for the sale of Rochester Seeds by the pound, &c.

Buffalo, W. & G. Bryant—Batavia, L. Seaver—Lockport, L. H. Marks & Co.—Albion, Nicholson & Paine—Brockport, A. B. Bennett—LeRoy, Tompkins & Morgan—Scottsville, Garbutt & Co.—Mount Morris, R. Sleeper—Dansville, H. B. Williams & Son—Geneseo, L. Turner—Canandaigua, L. C. Cheney & Co.—Palmyra, Hoyt & May—Oswego, C. & E. Canfield—Geneva, Hemip & Cone—Waterloo, T. McClintock—Auburn, Wm. Hughes—Syracuse, Foster & Nott—Utica, J. E. Warner & Co.,—Homer, Wm. Sherman & Son—Amsterdam, J. W. Sturtevant—Schenectady, D. L. Powell—Troy, J. Daggett & Co.—Ballston, E. W. Lee—Lansingburg, R. Harrison—Pittsfield, Mass., Isaac C. Cole—Springfield, Benj. R. Blight—Westfield, Jessup & Co.—Hudson, W. & G. Storrs.

Rochester, April 1, 1846—2t.

PLOWS.

FOR list of Plows for sale at the ALBANY AG. WAREHOUSE, 23 Dean-st., see Cultivator for Feb., 1846, page 72. Agricultural Implements of all kinds, for sale at the same place.

March 1, 1846.

E. COMSTOCK & Co.

DURHAM BULL FOR SALE.

THE subscriber (not having sufficient use for him,) offers for sale his imported, thorough bred Durham Bull, "Prince Albert,"

He is five years old—a roan, of medium size—quiet in temper, and easily managed. For a portrait and description of this bull, see the August number of the Cultivator, and for his pedigree see the British Herd Book, vol. iv., page 382. His sire was the celebrated bull, "Sir Thomas Fairfax."

If not previously sold, he will be offered for sale at the next show of the New-York State Agricultural Society.

Letters on the subject may be addressed to the subscriber at Red Hook, Dutchess county, N. Y., where the bull can be seen.

Jan. 1, 1846.—tf

ROBERT DONALDSON.

100 DOZEN CAST STEEL HOES.

THE subscribers have on hand an elegant assortment of Cast Steel Hoes, highly polished, and finished in the best manner. Among them 50 dozen made by Henry Tower, of Milbury, Mass., of four or five different numbers and prices. Also several other kinds of neck and eye hoes. Merchants and others dealing in hoes are invited to examine them.

E. COMSTOCK & Co.

Albany Ag. Warehouse, March 1, 1846.

DUTCHESS AGRICULTURAL INSTITUTE.

THE summer session of this institution commences the first week in April, under direction of the subscriber, at the *Wilkinson Premium Farm*, in the Western Valley of Union Vale, 12 miles east of Poughkeepsie.

The course of studies in this institution is such as to give every facility for acquiring a most thorough knowledge of scientific and practical agriculture, with the use of the best modern improved implements. Instruction in physics, with lectures on those natural sciences requisite to constitute a perfect agricultural education, will be under the care of teachers amply qualified, and of tried experience. A select *Farmer's Library* with numerous agricultural papers and periodicals is also provided for the general benefit. The labor performed by the students is under the immediate supervision of the principal who superintends all farm operations.

A course of lectures will be delivered on each of the Domestic Animals, commencing with the Horse, during which a perfect skeleton will be at hand.

The farm contains 220 acres of land, embracing a great variety of soil. The location is pleasant and healthful. The buildings are extensive and commodious, for such an institution; the house 106 by 30 feet.

A conveyance runs regularly to and from Poughkeepsie, on Wednesdays and Saturdays, for the mail and passengers, and the general convenience of the institution.

Students attend church at such places as their parents or guardians may direct.

Students received during the whole season of farm work, the year reckoning in each case from the day of arrival. No student received for less than one year. Fee for the year \$200, which includes tuition, board, with beds and bedding, washing, and ordinary mending, fuel and lights.

This Institution is under the patronage of the American Agricultural Association, the Farmers' Club of the American Institute, and the Agricultural Society of Dutchess.

For further particulars address the Principal and Director of Farm operations, Poughkeepsie Post Office, Dutchess County, New-York.

JOHN WILKINSON.

REFERENCES.

Board of American Institute;
Board of the American Agricultural Association;
Rev. L. M. Vincent, New-York;
John L. Mason, Esq., " "
Prof. Cyrus Mason, " "
John Van Wyck, New Hamburg, Dutchess County;
Rev. Abraham Polhemus, Hopewell, "
Charles Bartlett, A. M., Principal Collegiate School Poughkeepsie;
Rev. H. G. Ludlow, Poughkeepsie;
Gen. Thos. L. Davies, President of the Bank of Poughkeepsie;
Wm. A. Davies, Esq., Pres. of Farmers' and Manuf's Bank;
Henry S. Richards, Esq., Poughkeepsie;
Rev. S. Mandeville, La Grange.

April 1—2t.

THE MARYLAND AGRICULTURAL IMPLEMENT
MANUFACTURING Co., BALTIMORE.

ROBERT SINCLAIR, Jr. & Co., Proprietors.

AT this manufactory is already on hand and for sale—the Maryland *Self Sharpening Plows*, warranted the most perfect in the United States.

*Corn and Cob Crushers, Corn Mills,
Endless Chain and Leaver Horse Powers,
Thrashing Machines, Corn Shellors,*

for hand and horse power.

Cylindrical and Common Straw Cutters.

Also every variety of Cultivating and Sod Plows, Cultivators, Harrows and Farming Tools generally. In store

Field and Garden Seeds,

warranted fresh and first quality.

Implement and Seed Catalogues furnished on demand, with prices and description of machines, seeds, trees, &c,

S. & Co.

March 1, 1846.—March and May.

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New-York, March, 1846—4t.

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May 1—21.

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May 1, 1846.